AUTHOR INDEX

Abbasi, M. M. 344, 353
Abraham, D. 337, 350
Abrams, R. 385, 391, 399
Achleitner, E. 225–232
Ackerman, S. 333
Acs, G. 341, 343, 352
Adamczyk, D. L. 323, 328, 329, 331, 333
Adams, E. G. 185, 203
Adams, R. L. P. 338, 341, 344, 350, 352
Adamson, D. J. 420, 427
Adolphson, C. 188, 203
Agarwal, K. C. 385, 392, 399
Agarwal, R. P. 323, 331
Agris, C. H. 319
Ahluwalia, G. S. 30, 31, 41, 48, 49, 60, 65, 68–71, 82–86, 88, 89
Akhverdyan, V. Z. 291, 299
Akopyan, G. I. 291, 298
Akopyan, Z. I. 291, 298
Alazard, R. 288, 298
Alberto, P. 361, 374
Albrecht, A. M. 14, 24
Alenty, A. 14, 24
Alfant, M. 236, 243
Alhonen-Hongisto, L. 100, 102, 108, 117, 118, 121, 124, 125–139
Allan, P. W. 323, 331
Allegra, C. J. 4, 10
Allen, J. C. 93, 101
Allen, L. 182, 201
Allen, L. B. 29, 30, 39–41, 67, 87
Allen, L. M. 182, 183, 202
Alling, D. W. 35, 42
Alt, F. W. 5, 10
Amo, H. 144, 152
Ananieva, L. N. 303, 314, 318
Anders, M. W. 182, 202
Anderson, J. E. 326, 332
Anderson, L. W. 234, 242
Anderson, R. A. 267, 274
Andrews, M. L. 268, 274
Anehus, S. 103, 109, 110, 112, 114, 120, 122–124
Ankilova, N. V. 291, 299
Ansfield, F. J. 148, 150, 153
Antoni, F. 157, 173
Anukarahanonta, T. 417–423, 426, 429–434
Aoki, T. 157, 163, 168, 173, 180, 195, 199, 201, 204, 205, 207, 208, 212,214–216, 218, 220, 222, 225–227, 230, 231, 233, 242
Aoyagi, K. 233, 237, 242
Aprison, M. H. 193, 204
Arakawa, M. 182, 202
Arcamone, F. 267, 274
Ardalan, B. 157, 173, 181, 182, 186, 187, 196–198, 201–205
Ariyoshi, Y. 144, 152
Arnett, G. 385, 399
Arnold, S. T. 48, 65, 68, 70, 88
Arrick, B. A. 182, 202
Asai, T. 236, 238, 243
Asano, K. 30, 41
Aschman, D. P. 382, 384
Ashwell, G. 405, 415
Aswell, J. F. 330, 334
Atlan, H. 254, 260
Atmar, V. J. 112, 123
Atsumi, K. 30, 41
Atsumi, T. 30, 41
Attardi, G. 6, 10
Aurelian, L. 319
Avila, F. 339, 351
Avsman, R. 144, 150, 152
Ayusawa, D. 358, 373

Babkina, G. T. 278, 289, 291, 296, 298, 299
Baccanari, D. P. 14, 24
Bacchi, C. J. 94, 101
Bach, D. 263, 268, 273
Bachelard, H. S. 193, 204
Bachrach, U. 102, 105, 120, 122–124
Bacon, P. E. 385, 388, 392–401
Bader, H. 264, 274
Baele, B. 360, 374
Baglioni, C. 38, 42
Baguena, R. 240, 243
Bahe, C. P. 279, 296
Bailey, B. D. 4, 6, 10, 11, 358, 373
Bajkovič, N. 338, 350
Baker, B. R. 277, 296
Baker, L. H. 144, 145, 152, 341, 352
Baldetorp, B. 103, 120
Balduzzi, P. C. 270, 274
Balis, M. E. 96, 102, 385, 391, 399
Ball, C. R. 247, 259
Ball, W. J., Jr. 96, 102
Ballas, Z. K. 347, 354
Ban, J. 46, 64, 68, 70, 88, 156, 157, 161–163, 167, 172, 174, 175

Banerjee, A. K. 38, 42
Banfi, D. 157, 173
Bannasch, P. 426, 433, 434
Baranov, L. V. 317, 320
Barbehenn, E. K. 17, 24
Barber, C. 320
Bardin, C. W. 105, 108–111, 114, 121, 122, 126, 137
Baril, E. F. 398, 401
Barker, A. D. 184, 202
Barker, P. E. 6, 10
Barr, P. 378, 383
Bartholeyns, J. 110, 116, 117, 122, 124, 130, 138
Barton, P. A. 236, 243
Bastow, K. F. 369, 375, 377, 381–384
Bateman, J. R. 144, 149, 152, 153
Bauer, C. 405–416, 418, 426
Bauer, R. J. 29, 35, 40
Bauer, U. 246, 250, 251, 259
Baugh, C. M. 360, 374
Bause, E. 406, 415
Baxter, J. A. 252, 260
Bayev, A. A. 286, 297
Baylin, S. B. 95, 101, 116, 124
Beacham, L. M., III. 323, 331, 332, 334
Beauchamp, L. 330, 334, 378, 384
Becker, F. F. 429, 433
Becker, Y. 331, 334
Beckman, S. B. 6, 11, 14–18, 22, 24
Bedikian, A. Y. 188, 203
Beets, C. R. 157, 174
Behrens, M. 337, 350
Beidler, J. L. 5, 10
Beisler, J. A. 344, 353
Bekesi, J. G. 417, 418, 425–427
Belikova, A. M. 278, 284, 285, 293, 296, 297, 299
Bell, D. M. 29, 40
Bellelli, L. 257, 260
Belt, R. J. 185–187, 190, 191, 203
Benemetskaja, L. Z. 310, 319
Bengmark, S. 429, 433
Benimetskaya, L. Z. 288, 297
Benjamin, R. S. 186, 187, 203
Benkovic, S. J. 24
Bennett, L. L., Jr. 207, 222, 323, 331, 385, 394, 399, 420, 427
Benoit, P. 343, 353
Benrezzak, O. 97, 102
Benyesh-Melnick, M. 377, 383
Berenbaum, M. C. 200, 205
Berens, R. L. 328, 329, 333
Berenson, R. J. 5, 10
Beretta, G. 146, 152, 153
Berger, A. E. 157, 173, 179, 183, 185, 199, 201, 208, 222
Berger, F. G. 110, 111, 122
Berger, N. A. 39, 42
Berger, S. J. 39, 42
Bergeron, R. J. 93, 101
Bergmann, E. D. 331
Berl, S. 193, 204
Berman, H. M. 49, 65
Bernacki, R. 413, 414, 416
Berne, R. M. 332
Bernhardt, A. 116, 124
Bernhart, S. A. 235, 243
Berridge, M. J. 256, 260, 269, 270, 274
Berry, M. N. 234, 242
Bertino, J. R. 3–11, 13, 14, 17, 19, 23–25, 358, 372, 373
Besati, A. 182, 202
Besserer, J. A. 9, 11
Bessis, M. 264, 267, 273
Besterman, J. M. 255, 260
Bethel, F. H. 23
Betts, C. R. 67, 68, 70, 73, 74, 88
Betts, R. F. 29, 40
Beverly, S. M. 6, 7, 11, 370, 375
Bey, P. 113, 114, 116, 123–125, 136
Bhalla, K. 196, 204
Bhuyan, B. K. 157, 173, 179, 183, 199, 201
Biedler, J. L. 14, 24
Bierman, S. M. 29, 40
Billings, A. A. 147, 153
Billmire, D. E. 340, 351
Birdwell, R. 360, 362, 365, 373
Bischoff, E. 236, 238, 243, 413, 416–418, 420, 425
Bitonti, A. J. 94, 101
Bitran, J. D. 147, 153
Bittner, G. 168, 175, 181, 199, 201
Bjursell, G. 390, 400
Black, O., Jr. 97, 102
Bláha, V. 335, 349
Blake, K. R. 319
Blakley, R. L. 14, 15, 17, 19, 24
Blanding, J. H. 236, 243
Bleile, B. 371, 375
Blithe, D. L. 405, 415
Blobel, G. 318
Bloch, A. 179, 185, 201, 208, 222
Blowers, C. L. 157, 173, 179, 183, 199, 201
Blum, M. R. 360, 362, 373, 374
Boadella, A. C. 360, 374
Bobek, M. 378, 383
Bodey, G. P. 185, 186, 188–190, 203, 341, 352
Bodo, G. 38, 39, 42
Bogachev, V. S. 294, 299
Bogden, A. E. 157, 173, 184, 202, 208, 222, 330, 333

Boldizsar, M. 155–175
Bolt, H. M. 417, 418, 426, 433, 434
Bommer, U. A. 291, 299
Bono, V. H. 157, 159, 168, 169, 173, 179, 182, 201, 202, 208, 222, 225, 232, 335, 348
Borchart, R. T. 327, 333
Borden, E. C. 185–188, 191, 203
Borek, E. 36, 38, 42, 418, 426
Borella, L. D. 194, 204
Borg, A. 112, 123
Boritzki, T. J. 9, 11, 47, 65, 164, 174, 175, 207, 222, 226, 232, 388, 389, 400
Börjesson, B. 429, 433
Boron, W. F. 249, 259
Boucek, R. J. 109, 122
Bouchard, J. 341, 342, 352
Boutorin, A. S. 289, 298
Bowen, J. W. 255, 260
Bower, S. G. 212, 222, 233, 243
Bowers, S. W. 360, 365, 367, 370, 373
Boynton, H. L. 259
Bradstock, W. F. 326, 332
Braunwald, J. 144, 152
Brenckman, W. D. 360, 362, 373, 374
Brewster, G. 266, 274
Brix, M. 429, 433
Brockman, R. W. 342, 353, 385, 394, 399
Brosnan, M. E. 112, 123
Bross, I. D. J. 144, 150, 152
Brouček, J. 338, 350
Browman, G. P. 4, 10
Brown, N. C. 388, 394, 398, 400, 401
Brown, O. E. 358, 360, 362–364, 369, 371, 373–375
Brown, P. C. 5, 10, 358, 363, 364, 370, 373, 374
Brownlee, R. W. 144, 152
Brox, I. W. 4, 10
Bruce, W. R. 157, 164, 171, 174
Bruckner, J. W. 148, 153
Brugarolas, A. 361, 374
Bruno, S. 184, 185, 202
Budéšinský, M. 342, 353
Budker, V. G. 291, 298
Buchar, E. 418, 426
Büchsel, R. 407, 413, 416
Buckley, J. T. 270, 274
Buckley, S. M. 207, 222
Bukrinskaya, A. G. 301–320
Bulichev, N. A. 291, 299
Bull, A. W. 95, 96, 101, 102
Bulychev, N. V. 288, 297
Bundred, N. J. 98, 99, 102
Buneva, V. N. 291, 292, 298, 299
Bunick, D. 333
Burchall, J. J. 3, 9
Burchenal, J. H. 100, 102, 134, 139, 194, 204
Burgess, M. A. 185, 186, 190, 203, 341, 352
Burk, R. F. 193, 204
Burke, B. 406, 415
Burningham, R. 144, 152
Burns, N. J., III. 31, 41
Buroker, T. 144, 149, 152
Burrows, H. J. 144, 152
Burt, M. E. 157, 163, 168, 173, 195, 204, 208, 212, 214–218, 220, 222, 225–227, 231
Buryakova, A. A. 292, 299
Buskirk, H. H. 337, 349
Bussereau, F. 36, 42
Butterworth, C. E., Jr. 360, 374

Caballes, L. 130, 138
Cadman, E. 337, 338, 343, 350, 353
Calabresi, P. 335, 336, 348, 349
Calvert, A. H. 261, 358, 373
Cambor, C. 323, 326, 332
Camitta, B. M. 194, 204
Cammack, N. 382, 384
Campbell, M. T. 30, 39, 41, 67, 87
Canbor, C. 395, 401
Canellakis, E. S. 109, 112, 122, 123
Canonico, P. G. 29, 31, 32, 36, 41, 42
Cantley, L. C. 270, 274
Cantoni, G. L. 318, 327, 332, 333
Caramela, M. G. 303, 318
Carey, N. H. 320
Carlin, D. A. 188, 203
Carman, M. D. 6, 11, 358, 373
Carmen, M. 3–11
Carney, D. N. 6, 11, 85, 86, 89, 358, 373
Carpenter, J. W. 323, 331, 385, 399
Carter, D. D. 112, 123
Carter, G. L. 385–401
Carter, S. K. 144, 151, 153, 157, 173, 298
Casara, P. 113, 114, 116, 117, 123–125, 136
Cashmore, A. R. 6, 9–11, 19, 25, 358, 372, 373
Casper, R. 198, 205
Cass, C. E. 181, 201, 327, 332
Cassel, D. 255, 260
Catane, R. 182, 202
Catino, D. M. 39, 42
Cavalletti, E. 182, 202
Cavalli, F. 361, 374
Cavallito, J. C. 360, 373
Cavins, J. A. 149, 150, 153
Černoch, A. 335, 349
Cerný, M. 409, 413, 414, 416
Cha, S. 330, 334, 397, 401
Chabner, B. A. 4, 6, 10, 11, 13, 24, 198, 205, 337, 338, 349, 350, 358, 372, 373

Chabot, G. G. 341, 352
Chahavala, S. B. 252, 260
Chahinian, A. P. 185, 186, 190, 191, 203
Chahwala, S. B. 263–274
Chakhmakhcheva, O. G. 292, 299
Chambard, J. C. 254, 260
Chandrasekaran, B. 198, 205
Chang, B. K. 97, 102
Chang, J. P. 417, 426
Chao, E. Y. 323, 331
Chartrand, P. 381, 384
Chasin, L. A. 5, 10
Chattopadhyaya, J. 317, 320
Chayen, R. 102, 120, 122–124
Chemasova, A. N. 284, 285, 297
Chen, D.-S. 431, 434
Chen, I. S. 323, 332
Chen, K. Y. 116, 124
Chen, M. S. 330, 334
Cheng, H.-W. 329, 334
Cheng, Y.-C. 323, 330, 332, 334, 369, 375, 377–385, 394, 399
Chen Tsay, G. 410, 416
Chernikova, T. S. 282, 297
Chiang, G. H. 340, 351
Chiang, P. K. 327, 332, 333
Chidester, C. G. 157, 173, 179, 201
Chien-Song, K. S. 358, 373
Chimitova, T. A. 291, 292, 298, 299
Chiou, J.-F. 377–384
Chiou, S.-H. 289, 298
Chlebowski, R. T. 149, 153
Choi, J. H. 103, 108, 118, 120, 121
Chopin, P. W. 316, 320
Christman, J. K. 341, 343, 352
Christopherson, R. I. 196, 204
Chu, M. Y. 330, 333
Chu, S.-H. 323, 326, 332, 395, 397, 401
Chun, E. H. L. 247, 259
Chun, Y. 385, 399
Čihák, A. 335–354
Čižková, J. 346, 354
Clark, G. M. 190, 203
Clarke, D. A. 207, 222
Clarke, D. D. 193, 204
Clarkson, B. D. 194, 204
Clauw, D. J. 183, 202
Claverie, N. 114, 116, 124
Clemens, M. J. 247, 259
Clendeninn, N. J. 4, 10, 13, 24, 358, 372
Cline, E. J. 157, 174
Clubb, K. J. 183, 202
Coen, D. M. 381, 382, 384
Coffino, P. 108–111, 118, 121, 126, 137
Cohen, F. 326, 332
Cohen, M. B. 31, 41
Cohn, M. S. 103, 120
Colacino, J. 330, 334
Coleman, C. N. 337, 349
Coleman, J. 315, 319
Comis, R. L. 144, 151
Compere, S. J. 340, 351
Connors, T. A. 247, 254, 259
Conover, C. 135, 139
Constantinides, P. G. 340, 351
Conti, P. S. 100, 102
Cooney, D. A. 30, 31, 41, 48–50, 55, 60, 64, 65, 67–74, 82–86, 88, 89, 157, 159, 168–170, 173, 174, 179, 182, 196, 201, 202, 204, 205, 208, 222, 225, 232, 233, 242
Cooney, M. H. L. 330, 334
Cooper, G. M. 323, 330, 332, 334
Cooper, R. G. 150, 151, 153
Corfield, A. P. 414, 416
Corrigan, M. V. 182, 202
Corti, A. 129, 137
Cory, J. G. 164, 175, 385–401
Cossu, G. 405, 415
Costa, E. 191, 203
Cott, A. V. 30, 31, 41
Couch, R. B. 29, 40
Cowan, K. H. 6, 11, 358, 372, 373
Cowell, H. R. 6, 10
Cox, R. P. 413, 416
Crabtree, G. W. 330, 333
Cragoe, E. 255, 260
Cragoe Jun, E. C. 255, 260
Cramer, F. 323, 331
Crandall, D. E. 236, 243
Creba, J. A. 266, 274
Creusot, F. 341, 343, 352
Cripps, C. 188, 203
Criss, W. E. 426
Crissman, J. D. 96, 102
Crkvenjakov, R. 338, 350
Crook, S. T. 298
Crumpacker, C. S. 381, 384
Crusberg, T. 266, 274
Cuatrocasas, B. 255, 260
Cucchi, C. A. 5, 10
Cunningham-Rundles, S. 103, 119
Curreari, A. R. 148, 153
Currie, V. E. 360–362, 374
Curt, G. A. 6, 11, 13, 24, 358, 372, 373
Curthoys, N. P. 182, 194, 202, 204
Curtis, D. R. 225, 231
Cysyk, R. L. 196, 204, 234, 242, 421, 427

Dadonna, P. E. 396, 401
Dady, P. J. 358, 373
Damin, L. 330, 334
Danzin, C. 113, 114, 116, 117, 123–125, 136

Dass, P. D. 182, 202
Datema, R. 406, 415
Datta, A. K. 377, 383
Dave, C. 129, 130, 133, 137, 138
Davies, D. R. 318
Davignon, J. P. 48, 55, 65, 67, 88
Davis, F. A. 157, 174
Davis, G. E. 418, 426
Davis, H. L. 185–188, 191, 203
Davis, R. D. 48, 55, 65, 67, 88
Davis, R. H. 103, 119, 235, 243
Davis, T. E. 185–188, 191, 203
Davis, W. 261
Dawson, G. 410, 416
Dawson, W. D. 36, 42
Deangelis, R. L. 360, 373
Deas, M. 157, 173, 182, 201
Debov, S. S. 318
Debruyn, C. H. M. M. 333
Decker, K. 235, 236, 238, 242, 243, 413, 416–418, 420–422, 425–427
Declercq, E. 330, 334, 378, 383
DeConti, R. C. 335, 348
Dedhar, S. 6, 11, 371, 375
Deeprose, R. D. 328, 333
Defeudis, F. V. 204
Deitch, A. 196, 204
Dekoning, T. F. 185, 203
Delap, R. J. 9, 11
De Laat, S. W. 255, 260
DeLong, D. C. 157, 163, 173, 174
De Luca, G. 257, 260
Demers, J. 343, 353
Demidova, T. V. 291, 298
De Miranda, P. 330, 334, 378, 384
Denton, J. E. 46, 64, 68, 70, 88, 156, 157, 162, 163, 168, 172, 173, 195, 199, 204, 208, 212, 214, 215, 218, 220, 222, 225–227, 230, 231, 233, 242
Derse, D. 341, 352, 377, 381–385, 394, 399
Dervan, P. B. 289, 298
Descamps, J. 378,383
Desomer, P. 378, 383
Desouza, J. V. 48, 65, 68, 70, 88
Desser, R. K. 147, 153
Deters, J. 103, 119
Dianov, G. L. 317, 320
Diddens, H. 370, 375
Diekema, K. A. 95–97, 100–102
Dietz, A. 157, 173, 179, 201, 207, 220, 222, 337, 349
Dion, R. L. 30, 31, 41, 48, 49, 55, 60, 64, 65, 67, 70, 71, 74, 88, 157, 159, 168–170, 173, 179, 182, 201, 202, 208, 222, 225, 232
Diop, D. 330, 334
DiPaolo, J. A. 133, 138
Divine, G. W. 29, 40
Dix, D. E. 169, 175
Dixon, J. M. J. 98, 99, 102
Dobbert, N. N. 303, 314, 318
Dobrikova, E. Y. 291, 298
Dobson, P. P. 248, 250, 259
Dolnick, B. J. 5, 10
Domin, B. A. 369, 375, 378, 383
Donohue, J. P. 47, 65
Donohue, D. R. 14, 24
Doppler, W. 247–261
Doskocil, J. 338, 350
Dower, W. J. 6, 11
Dowling, R. H. 101
Downes, C. P. 265, 266, 274
Doyle, D. 111, 123
Drake, J. C. 4, 6, 10, 11, 337, 338, 349, 350, 358, 373
Drake, S. 29, 40
Dralle, E. I. 127, 137
Driscoll, J. S. 344, 353
Drutsa, V. L. 282, 297
Dubbs, D. R. 323, 332
Dube, S. 3–11
Dube, S. K. 6, 10, 358, 372, 373
Dubois, N. F. 385, 399
Duceman, B. W. 220, 223
Duch, D. S. 360, 365, 367, 370, 373
Duchamp, D. J. 157, 173, 179, 201
Duchesne, M.-C. 108, 118, 121, 126, 136
Dudycz, L. W. 398, 401
Duffy, T. H. 6, 11, 13–25
Duncan, G. S. 327, 328, 332, 333
Dunlap, R. B. 17, 19, 21, 22, 24, 25
Dutschman, G. E. 330, 334, 377, 383
Dyke, R. W. 157, 163, 174
Dzhandzhugazyan, K. N. 291, 298
Dzurillay, E. 157, 173

Earhart, R. H. 179–205, 225, 231
Earle, M. F. 31, 41, 48, 55, 64, 84, 85, 89
Eble, J. N. 180, 199, 201, 205
Eckhardt, S. 143–153, 157, 172–174, 211, 222
Edelstein, M. P. 360, 365, 367, 370, 373
Edmonds, M. 303, 318
Efimov, V. A. 292, 299
Eibl, B. 9, 11
Einspahr, F. J. 191, 193, 203, 225, 231
Eisenhauer, E. 188, 203
Eisenman, R. 340, 351
Elfarra, A. A. 182, 202
Elford, H. L. 156, 157, 164, 174, 175, 385, 399
Elford, R. M. 385, 399
Elfring, G. L. 187, 203

Elion, G. B. 323–334, 378, 384
Elis, J. 335, 336, 348, 349
El Kouni, M. H. 397, 401
Elliott, R. D. 323, 331
Elliott, W. L. 45, 49, 50, 52, 61, 64, 70, 88, 180, 199, 201, 205, 213, 215, 216, 222, 223
Ellis, R. B. 266, 274
Ellison, R. R. 144, 152
Elo, H. 125–139
Elson, D. 288, 297
Emanuelsson, H. 109, 110, 114, 122
Emrani, J. 199, 205
Emtage, I. S. 320
Engel, D. 6, 10
Engel, W. K. 134, 139
Engström, P. 149, 153
Erikson, R. L. 270, 274
Eriksson, B. 38, 42
Ermine, A. 35, 42
Ervin, T. J. 5, 10
Essani, K. 6, 11
Ettinger, D. S. 429, 433
Evans, J. S. 337, 349
Everitt, B. J. 360, 373

Facchinetti, T. 263, 268, 273
Faderan, M. A. 39, 42, 45, 46, 48–52, 55, 57, 58, 60, 61, 64, 65, 67, 68, 70, 79, 86, 88, 157, 163, 168, 170, 173, 175, 181, 195, 199, 201, 204, 205, 208, 212, 214–216, 218–220, 222, 223, 225–227, 230–233, 242
Fagerström, R. 129–132, 137, 138
Falk, H. 417, 418, 420, 427
Falkson, G. 144, 151, 152
Falkson, H. C. 144, 151
Fallon, H. J. 335, 348
Farber, E. 431, 434
Farr, A. L. 226, 232
Farrell, R. 112, 123
Fauler, J. 417–427
Feistein, M. B. 271, 274
Fernandez, H. 29, 40
Ferrel, J. E., Jr. 269, 271, 272, 274
Feurstein, B. 133, 138
Fields, A. L. 188, 203
Finch, S. A. E. 252, 259
Finklestein, J. Z. 341, 352
Fischer, P. H. 168, 175, 181, 199, 201, 205, 219, 223
Fischer, W. 413, 416
Fisher, P. A. 377, 383
Fite, R. 99, 102
Fitzgerald, G. B. 385, 399
Fleischer, A. E. 164, 175, 385, 386, 391, 399, 400
Fleishman, G. 188, 189, 203
Flintoff, W. F. 6, 11
Flowers, H. M. 409, 414, 416
Fong, W. F. 112, 123
Fonnum, F. 193, 203
Forchhammer, J. 340, 351
Fortier, N. L. 266, 274
Foss, R. G. 360, 362, 373, 374
Fox, B. W. 259, 427
Fox, I. H. 326, 332
Fox, J. 378, 383
Fox, M. 250, 259
Fozard, J. R. 99, 102
Franchi, A. 254, 255, 260
Franco, C. T. 6, 9–11
Frank, K. B. 377–384
Fraschini, P. 146, 153
Frazer, T. A. 358, 362, 373, 374
Frearson, P. M. 323, 332
Freeman, A. 194, 204
Freeman, M. 13, 23
Freese, M. 164, 175, 385, 399
Frei, E., III, 5, 10, 335, 348, 358, 373
Freireich, E. J. 341, 352
Freisheim, J. H. 17, 19, 21, 22, 24, 25, 371, 375
Frelin, C. 254, 260
Fridland, A. 371, 375
Friedkin, M. 8, 11, 13, 23
Friedlos, F. 250, 261
Friedman, S. J. 109, 122
Friend, D. S. 94, 101, 234, 242
Fritsch, E. F. 303, 318
Fröhlich, J. 471, 425
Fromer, J. 254, 260
Fry, D. W. 9, 11
Fućik, V. 337, 349
Fujisawa, H. 105, 108, 112, 121, 123
Fujita, K. 108, 109, 111, 112, 121–123
Fujita, T. 257, 261
Fujitaki, J. 36, 42
Fukui, M. 30, 41
Fulton, J. 341, 344, 352
Funanage, V. L. 6, 10
Fung, W. P. 4, 10
Funk, D. 266, 274
Furman, P. A. 330, 334, 378, 381, 382, 384
Futterman, S. 13, 23
Fyfe, J. A. 330, 334, 378, 384
Fyfe, M. J. 360, 362, 374

Gabrio, B. W. 14, 24
Gailani, S. 144, 152
Gait, M. J. 314, 319
Gala, C. L. 29, 40
Gale, G. R. 391, 400

Galegov, G. A. 36, 42
Galivan, J. 4, 10, 358, 373
Galliard, T. 266, 274
Galloway, K. S. 378, 384
Ganapathi, R. 257, 260
Ganeshaguru, K. 326, 332
Gantner, G. 247, 250, 251, 259
Garin, A. M. 152, 153
Gasser, T. 417–427
Gaugas, J. M. 123
Gazaryants, M. G. 291, 298
Gazdar, A. F. 116, 124
Gebeyehu, G. 30, 31, 41, 48–50, 55, 60, 64, 65, 67, 68, 70, 72–74, 88, 157, 174
Gehrke, C. W. 418, 426
Gelfand, E. W. 326, 332
Gentry, G. A. 330, 334
George, C. B. 387, 400
Georgiev, G. P. 303, 314, 318
Gerasimova, L. M. 310, 319
Gerberová, J. 335, 349
Gerhart, F. 114, 124
Germanier, M. 288, 298
Gerok, W. 233–243, 405, 409, 415, 418, 421, 425, 426, 429–434
Gerster, J. F. 326, 332
Gerzon, K. 157, 163, 173, 174
Gesner, B. M. 413, 416
Gewirtz, D. A. 4, 10
Ghendon, Y. Z. 317, 320
Giblett, E. R. 326, 332
Gibson, J. P. 95, 101
Giels, G. F. 360, 374
Gietzen, K. 264, 274
Gilbert, B. E. 29, 40
Gilbert, J. R. 372, 373
Gimautdinova, O. I. 278, 282, 296, 297
Ginsburg, V. 409, 416
Girshovich, A. S. 291, 299
Gladstone, N. 163, 174
Glaser, L. 255, 260
Glaser, R. 267, 274
Glaubiger, D. L. 182, 202
Glazer, R. I. 30, 31, 41, 48, 50, 55, 64, 67–74, 84, 85, 88, 89, 159, 170, 174, 333
Gleeson, P. 406, 415
Glišin, V. 338, 350
Glover, J. L. 47, 65, 180, 199, 201, 205
Glueck, C. J. 134, 139
Godovikov, A. A. 301–320
Golbey, R. B. 194, 204
Gold, E. 377, 383
Goldenberg, C. 315, 319
Goldie, J. H. 6, 11, 360, 371, 374, 375
Goldman, I. D. 4, 10
Goldman, R. 263, 268, 273
Goldstein, B. M. 49, 65
Goldstone, A. H. 326, 332
Golembieski, W. A. 96, 102
Gonzales, F. A. 342, 353
Goodman, M. G. 333
Goodwin, G. 116, 124
Goormaghtigh, E. 270, 274
Gopal, R. 382, 384
Gorman, M. 157, 173
Gorman, R. H. 157, 174
Gorn, V. V. 278, 289, 292, 296, 298, 319
Gorshkova, I. I. 291, 298
Goryachenkova, E. V. 291, 298
Goswami, B. B. 36, 38, 42
Gottikh, M. B. 288, 297
Goulian, M. 371, 375
Goutas, L. J. 358, 370–372, 375
Grabowski, D. 257, 260
Grachev, M. A. 278, 290, 291, 296, 299
Grahn, B. 105, 121
Granner, P. K. 315, 319
Grant, S. 196, 204, 337, 338, 343, 350, 353
Grassi, C. 373
Greco, W. R. 360, 374
Green, P. J. 315, 319
Greenspan, E. M. 148, 153
Greer, S. 323, 332
Greinert, R. 252, 259
Grens, A. 103, 120
Griffin, M. J. 39, 42
Griffith, O. W. 182, 202, 235, 243
Grill, S. P. 375, 369, 377, 383
Grillo-Lopez, A. J. 9, 11
Grindey, G. B. 179, 185, 201, 208, 222
Grineva, N. I. 278, 281–286, 293, 294, 296, 297, 299, 302, 310, 318, 319
Grisolia, S. 243
Grivsky, E. M. 360, 373
Groppe, C. 144, 149, 152
Gross, H. J. 38, 39, 42
Groudine, M. 340, 351
Grove, D. S. 411, 416
Grove, J. 108, 118, 121, 126, 130, 136, 137
Grundy, R. G. 267, 274
Grünewald, K. 247, 250–252, 259
Grünholz, H.-J. 413, 416
Grunicke, H. 247–261
Guaspari, A. 360, 362, 374
Gudat, F. 415, 416
Gudauskas, G. 6, 11
Guidotti, A. 191, 203
Gundersen, L. E. 17, 19, 21, 22, 24, 25
Gupta, M. 108–111, 118, 121, 126, 137
Guranowski, A. 327, 333
Gutman, R. 97, 102
Gutowski, G. E. 157, 163, 173, 174
Gutterman, J. U. 341, 352

Haas, C. D. 185, 186, 190, 191, 203
Haber, D. A. 6, 7, 11
Hafström, L. 429, 433
Haggerty, J. J. 323, 331
Hahn, R. G. 144, 145, 148, 149, 152, 153
Hakala, M. T. 360, 374
Hakomori, S. 405, 415
Halenda, S. P. 271, 274
Hall, C. B. 29, 40
Hall, T. C. 149, 150, 153, 181, 199, 201
Hall, W. J. 29, 40
Hallewell, R. A. 320
Halligan, B. D. 263, 273
Halpern, K. V. 109, 122
Ham, R. G. 103, 119
Hamers, J. 360, 374
Hames, B. D. 318
Hamill, R. L. 157, 163, 173, 174
Hamilton, S. R. 95, 101
Hamilton, T. C. 257, 260
Hamlyn, P. H. 314, 319
Hamrell, M. R. 358, 360, 362–364, 369–371, 374
Han, N. 196, 204
Handschumacher, R. E. 169, 175, 335, 348, 387, 400, 420, 421, 427
Hanka, L. J. 157, 173, 179, 185, 201, 203, 207, 220, 222, 337, 349
Hankerson, J. G. 196, 204
Hanna, N. B. 342, 344, 346, 353
Hannonen, P. 128, 130, 132, 137
Hansen, H. H. 361, 374
Hansen, J. J. 191, 203
Hansen, P. A. 103, 119
Harding, N. G. L. 17, 19, 21, 22, 24, 25
Harford, L. 405, 415
Harkrader, J. R. 167, 175
Harley, C. 196, 204
Harms, E. 413, 416
Harper, G. R. 48, 65, 68, 70, 88
Harrap, K. R. 4, 10, 261, 358, 371, 373, 375
Harrer, M. 247, 250, 251, 259
Harris, M. 340, 351
Harris, T. M. 406, 415
Hartley, D. 6, 11
Hartman, K. D. 333
Hartman, S. C. 182, 202, 207, 222
Hašek, M. 354
Haseltine, W. A. 5, 10
Haser, W. G. 194, 204
Hassels-Vischer, B. 407, 413, 416
Häussinger, D. 201, 204, 223, 233–243
Hawkins, P. T. 266, 274
Hawthorne, J. N. 266, 274
Hayano, K. 30, 41
Hayashi, M. 30, 41
Hayashi, S. 108, 109, 111, 112, 114, 121–124
Heath, E. C. 410, 416
Heby, O. 103–125, 132, 136, 138
Hecht, S. M. 298
Heldin, C. H. 256, 260
Helene, C. 315, 319
Helgstrand, E. 38, 42
Heller, J. S. 112, 123
Helliger, W. 247, 250–252, 259
Hems, R. 233, 242
Henderson, A. M. 323, 331
Henderson, J. F. 4, 10
Henninger, H. 235, 242, 417, 418, 420, 421, 426
Henningsson, S. S. G. 105, 121
Henry, D. W. 331, 334
Henshaw, E. C. 247, 259
Herbst, E. J. 99, 102, 103, 119
Herlyn, M. 109, 122
Herr, H. W. 100, 102
Herrmann, B. 417–419, 421–423, 426
Hershfield, M. S. 328, 333
Hertz, L. 193, 204
Heustis, W. H. 269, 271, 272, 274
Hewson, K. 395, 401
Hibasami, H. 94, 98, 101
Hickey, R. C. 188, 203
Hickman, J. A. 252, 260, 263–274
Hidaka, H. 94, 98, 101
Hidvégi, E. 157, 173
Higgis, S. J. 318
Hildreth, S. 29, 40
Hill, B. T. 159, 174, 360, 374
Hill, D. L. 323, 331
Hill, K. E. 193, 204
Hillcoat, B. L. 19, 25
Hiller, S. A. 147, 153
Hinshaw, B. C. 326, 332
Hirayama, C. 431, 433
Hirota, K. 378, 383
Hirsch, F. 247, 250, 251, 259
Hirschhorn, R. 326, 332
Hirshfield, I. N. 103, 119
Hitchings, G. H. 3, 9, 323–325, 331
Hitoi, A. 405, 415
Ho, R.-K. 431, 434
Hodas, S. 395, 391, 399, 400
Hoehn, M. 157, 173, 174
Hoeksema, G. W. 110, 114, 122
Hoffbrand, A. V. 326, 332
Hoffman, D. H. 157, 174
Hoffman, R. 230, 232
Hofmann, J. 247–261
Hogan, B. L. M. 105, 111, 120
Holcenberg, J. S. 194, 195, 204
Holczinger, L. 157, 173

Holland, J. 157, 173
Holland, J. F. 144, 152, 185, 186, 190, 191, 194, 203, 204, 370, 375
Holmes, R. E. 395, 401
Holstege, A. 233–243, 417–427, 429–434
Hölttä, E. 93, 101, 103, 120, 126, 128, 130, 132, 134, 136, 137, 139
Holý, A. 335, 348
Homan, E. R. 182, 202
Homolka, J. 336, 349
Honess, R. W. 382, 384
Honore, T. 191, 203
Hoogenraad, N. J. 236, 243
Hoogstraten, B. 185, 186, 190, 191, 203
Hoshi, H. 96, 101
Hoshino, A. 14, 24, 144, 152
Horns, R. C., Jr. 6, 11
Horváth, I. P. 157, 172, 173
Hoth, D. 146, 152
Houchens, D. P. 157, 173, 184, 202, 208, 222
Hovos, P. 247, 259
How, S.-W. 431, 434
Hraba, T. 354
Hrodek, O. 341, 352
Hruska, J. F. 29, 40
Hsu, H.-C. 431, 434
Huang, E.-S. 377, 378, 383
Huang, R. C. C. 303, 318
Hudson, J. L. 183, 202
Huennekens, F. M. 6, 11, 13–25
Huffman, J. H. 29, 40
Huggins, J. W. 29, 31, 32, 41, 42
Hurley, J. D. 144, 152
Hutchinson, D. J. 14, 24
Hutchinson, W. B. 174
Hyánek, J. 336, 349
Hynes, J. B. 371, 375
Hynie, S. 342, 352
Hyrniuk, W. M. 4, 10

Iannone, M. 327, 332
Igarashi, K. 100, 102, 130–133, 137
Ihle, J. N. 303, 318
Ihlenfeldt, M. 247, 250, 251, 259
Ike, Y. 279, 296
Ikeda, F. 236, 238, 243
Ikegami, S. 381, 384
Ikegami, T. 55, 65
Ikuta, S. 279, 296
Iland, H. J. 357–375
Ilyin, Y. V. 303, 314, 318
Imai, K. 144, 152
Imrie, R. C. 338, 350
Inaba, M. 30, 41
Inokushi, K. 431, 434
Inoue, H. 109, 121
Inouye, M. 315, 319
Institoris, E. 157, 164, 173
Institoris, L. 157, 172, 173
Irisa, T. 431, 433
Irvine, R. F. 256, 260, 269, 270, 274
Ishihara, H. 410, 416
Isomaa, V. V. 105, 108, 109, 111, 114, 121
Itakura, K. 279, 296
Ito, H. 94, 98, 101, 279, 296
Ivanova, E. M. 278, 280, 289, 296, 298, 302, 303, 305, 314, 318, 319
Ivanovskaya, M. G. 288, 297

Jackson, R. C. 9, 11, 45, 47, 54, 58, 60, 65, 155, 156, 164, 167, 172, 174, 175, 207, 222, 226, 232, 358, 370, 371, 373, 375, 388, 389, 391, 400, 417–419, 425
Jackson, S. T. M. 371, 375
Jacob, S. T. 113, 123, 220, 223
Jacobs, E. M. 144, 148, 152, 153
Jaffe, N. 358, 373
Jahrling, P. B. 39, 42
Jakoby, W. B. 296
Jakubowsky, A. 169, 175
Jänne, J. 93, 100–102, 104, 105, 108, 109, 113, 114, 116–118, 120, 121, 124–139
Jänne, O. A. 108–111, 114, 118, 121, 122, 126, 127, 137
Janossy, G. 326, 332
Jastreboff, M. 3–11
Jatsenko, J. A. 291, 298
Jayaram, H. N. 30, 31, 39, 41, 42, 45, 46, 48–50, 52, 53, 55, 57, 58, 60, 61, 64, 65, 67–89, 157, 159, 168–170, 173–175, 179, 181, 182, 186, 196, 201–204, 208, 222, 225, 226, 230, 232, 233, 242
Jayaraman, K. 286, 297
Jefferson, L. S. 105, 114, 120
Jeney, A. 157, 173
Joder-Ohlenbusch, A.-M. 116, 124
Johannson, N. G. 38, 42
Johns, D. G. 30, 31, 41, 48, 50, 55, 60, 64, 65, 67–74, 82–86, 88, 89, 157, 159, 170, 174, 230, 232, 338, 348, 350
Johnson, N. P. 288, 298
Johnson, R. K. 157, 173, 181, 182, 184, 196, 201, 202, 204, 208, 222, 418, 426
Johnston, R. N. 358, 370, 373, 375
Jolivet, J. 5, 6, 10, 11, 358, 372, 373
Jones, A. 378, 383
Jones, A. S. 330, 334
Jones, M. E. 196, 204
Jones, P. A. 340–343, 347, 351, 352
Jones, R., Jr. 144, 150, 152
Jones, T. W. 329, 333

Jorstad, C. M. 103, 119
Joseph, U. 185, 186, 190, 191, 203
Josephson, S. 317, 320
Juliano, R. 302, 318
Jung, M. J. 113, 114, 116, 123–125, 136
Jungwirth, C. 38, 39, 42
Jurovcik, M. 337, 339, 349, 351

Kabasheva, G. N. 285, 297
Kad-Shan, C. S. 6, 11
Kahana, C. 108–111, 118, 121, 126, 137
Kahlson, G. 105, 121
Kalousek, F. 339, 351
Kallio, A. 93, 100–102, 108, 118, 121, 126, 127, 130, 134, 137–139
Kamei, Y. 144, 152
Kameji, T. 108, 109, 111, 114, 121, 122, 124
Kamen, B. A. 4, 9–11, 370, 375
Kanamoto, R. 109, 122
Kanje, M. 116, 124
Käpyaho, K. 93, 101, 134, 139
Karasawa, E. 431, 434
Kardinal, C. 149, 153
Karlan, D. 339, 350
Karle, J. M. 234, 242
Karnofsky, D. A. 194, 204
Karnovsky, M. J. 268, 274
Karon, M. 337, 339, 341, 349, 351, 352
Karpova, G. G. 277–299, 302, 303, 305, 310, 318, 319
Karrer, K. 89
Kassuba, B. 409, 413, 414, 416
Kataoka, K. 144, 152
Kato, T. 144, 152
Katunuma, N. 207, 222
Kaufman, B. T. 17, 24
Kaufman, E. R. 381, 384
Kaufman, R. J. 5, 10, 363, 364, 374
Kawasaki, H. 431, 433
Kaye, A. 102, 120, 122–124
Kazakov, S. A. 288, 289, 298
Kazmers, I. S. 396, 401
Keefer, R. C. 340, 351
Keir, H. M. 125, 136, 377, 383
Keiser, H. R. 336, 349
Kelleher, L. E. 358, 370–372, 375
Kellems, R. E. 5, 10
Keller, J. W. 341, 352
Keller, P. M. 330, 334
Kelley, J. A. 30, 31, 41, 48–50, 55, 60, 64, 65, 67, 68, 70, 71, 73, 74, 88, 157, 174
Kelley, W. B. 396, 401
Kelley, W. N. 326, 332
Kellner, B. 157, 172
Kelly, M. 116, 124
Kempin, S. J. 361, 374
Kennel, W. L. 378, 384
Kenney, F. T. 303, 317, 318, 320
Kensler, T. W. 186, 196, 203–205, 233, 242
Keppler, D. 199, 205, 235–238, 242, 243, 413, 416, 417–427, 429–434
Kerrigan, D. 71, 88, 89, 263, 273
Kesner, L. 236, 243
Kessel, D. 181, 199, 201
Keyes, S. R. 263, 273
Khare, G. P. 29, 35, 40
Khung, C. L. 149, 150, 153
Kiefer, G. 247, 250, 251, 259
Kiely, M. L. 6, 7, 11
Kiernan, F. 266, 274
Kim, P. N. 144, 149, 152
Kimura, H. 96, 101
Kimura, K. 431, 434
King, W. W. K. 96, 102
Kingsnorth, A. N. 93–102
Kirk, C. J. 266, 274
Kirk, D. 341, 344, 352
Kirkpatrick, W. 29, 40
Kirsi, J. J. 29–43
Kishihara, M. 257, 261
Kisner, D. 144, 152
Kisselev, L. L. 291, 299
Kit, S. 323, 332
Kita, K. 236, 238, 243
Kitani, T. 105, 108, 112, 121, 123
Kiyohara, T. 30, 41
Kizaki, H. 156, 157, 163, 164, 168, 172–175, 207, 218, 222, 223, 225, 226, 230, 231
Klecker Jun, R. W. 257, 260
Klein, J. K. 429, 433
Klein, R. S. 328, 330, 333
Kleinert, E. L. 100, 102
Klepp, O. 361, 374
Knight, V. 29, 35, 40, 42
Knode, M. C. 323, 333
Knopf, K. W. 377, 381, 383, 384
Knorre, D. G. 277–299, 302, 303, 305, 314, 315, 318, 319
Knorre, V. L. 286, 297
Knott, C. E. 236, 243
Kobata, A. 405, 415
Kobayash, M. 431, 434
Kobayashi, N. 257, 260
Kobetz, N. D. 278, 296, 301–320
Koch-Weser, J. 113, 116, 117, 123, 124, 130, 137, 138
Koeller, J. M. 185–188, 191, 199, 203, 205, 219, 223
Kohn, K. W. 247, 248, 250, 259, 288, 298
Kohout, J. 346, 353

Koizumi, T. 257, 260
Kolassa, N. 181, 201, 327, 332
König, J. 335, 349
Kontula, K. K. 108–111, 118, 121, 122, 126, 127, 137
Kopper, L. 211, 222
Korbová, L. 346, 353, 354
Korn, D. 377, 383
Kornfeld, R. 406, 415
Kornfeld, S. 409, 416
Korytnyk, W. 413, 414, 416
Koszalka, G. W. 323, 328, 329, 331–333
Köteles, G. J. 157, 173
Köttgen, E. 405, 409, 415, 416
Kovac, P. 340, 351
Kovach, J. S. 144, 145, 152
Kovács, P. 158, 174
Koyama, H. 358, 373
Kozionov, A. L. 288, 297
Kozloff, I. A. 291, 298
Kozloff, M. F. 147, 153
Kozyreva, N. A. 278, 296
Krakoff, J. H. 194, 204
Kramer, D. L. 94, 101, 131, 138
Krauspe, P. 291, 299
Kravchenko, V. V. 291, 299
Krebs, H. A. 233, 242
Kredich, N. M. 327, 332
Kreis, W. 330, 334
Kremmer, T. 155–175
Krenitsky, T. A. 323, 328, 329, 331–333
Kroath, H. 38, 39, 42
Krogsgaard-Larsen, P. 191, 203
Krokan, H. 398, 401
Krokan, R. H. 398, 401
Krueger, R. G. 337, 349
Krug, E. 418, 426
Krystal, G. 6, 11, 340, 347, 351
Kučerová, V. 346, 354
Kudryashova, N. V. 291, 292, 298, 299
Kuehn, G. D. 112, 123
Kuentzel, S. L. 157, 173, 179, 183, 199, 201
Kufe, D. W. 185, 188, 191, 196, 203, 204
Kuhns, V. 323, 326, 332, 395, 401
Kumarev, V. P. 317, 320
Kuo, K. C. 418, 426
Kurbatov, V. A. 278, 289, 291, 296, 298
Kurita, S. 144, 152
Kurzchalia, T. V. 291, 299
Küta, A. 335, 348
Kutiavin, I. V. 289, 298, 314, 319
Kutler, M. 358, 362, 371, 373–375
Kuttan, R. 30, 41, 67, 70, 79, 81, 88, 89
Kutyavin, I. V. 319
Kuyper, L. 14, 24
Kuznetsova, L. M. 286, 297
Kyriakidis, D. A. 112, 123
Laas, T. 24
Lacaine, F. 93–102
Laemmli, U. K. 304, 318
Lafon, S. W. 328, 329, 333
Lai, M. T. 58, 65, 79, 81, 89
Lai, M.-Y. 431, 434
Laine, R. 131, 138
Lajtha, A. 203
L'Allemain, G. 255, 260
Lamar, C. 340, 347, 351
Lamb, R. A. 316, 320
Lambert, A. 24
Lamuraglia, G. M. 93–102
Lancaster, C. 185, 203
Lang, V. 270, 274
Langström, E. 103, 112, 120, 123
Lapis, K. 157, 173, 211, 222
Larsen, V. 144, 152
Larsson, A. 38, 42
Lasater, L. 393, 394, 400
Laster, W. R. 167, 175
Laszlo, J. 357–375
Laurier, C. 431, 434
Lauzon, G. J. 198, 205
Lavin, P. T. 146, 152
Lavrik, C. I. 291, 299
Lavrik, O. I. 278, 290, 291, 296, 299
Lawless, M. B. 103, 119
Lazdunski, M. 254, 260
Lebedev, A. V. 282, 288, 297
Lee, C.-L. 431, 434
Lee, H. J. 39, 43
Lee, K.-J. 303, 318
Lee, L. 360, 374
Lee, S. 360, 373
Lee, T. 337, 339, 349–351
Leeper, R. D. 194, 204
Legler, G. 406, 415
Lehman, C. P. 169, 175
Lehmann, J. 409, 413, 414, 416
Leichner, P. K. 429, 433
Leifer, Z. 103, 119
Leimbrock, S. 341, 352
Leloir, L. F. 407, 416
Lembach, K. J. 109, 122
Leone, L. 144, 152
Leopold, W. R. 9, 11
Leube, K. 199, 205, 417–422, 425, 427
Levinson, A. D. 7, 11, 14, 24
Levinson, C. 255, 260
Levison, S. A. 17, 19, 21, 24
Levitan, I. B. 338, 340, 350, 351
Levy, R. I. 134, 139
Lewin, L. M. 408, 416
Lewis, J. A. 247, 259
Ley, E. 279, 296
Li, L. H. 337, 349

Liao, S. 360, 374
Liao, S. H. T. 360, 362, 373
Libinzon, R. E. 291, 298
Lidale, M. Y. 147, 153
Lieberman, I. 385, 391, 399
Lien, E. J. 385, 392, 393, 399
Liepnieks, J. J. 39, 42, 45, 46, 49, 50–52, 55, 57, 58, 60, 61, 64, 67, 70, 79, 86, 88, 170, 175, 199, 205, 208, 216, 222, 223, 225, 226, 230, 232
Lin, A. L. 385, 399
Lin, J. 9, 11
Lin, K. T. 342, 343, 353
Lin, M.-I. 328, 330, 333
Lin, P. S. 263, 266, 273
Lin, T.-Y. 429, 433
Linden, M. 112, 123
Lindner, H. 247–261
Linitskaya, G. L. 36, 42
Linstead, D. 329, 333
Lippke, J. A. 5, 10
Lisovskaya, K. V. 317, 320
Lisý, V. 335, 348
Litterst, C. L. 48, 65, 68, 70, 88
Liu, A. 266, 274
Liu, A. Y.-C. 116, 124
Liu, C. T. 39, 42
Liu, D. 266, 273
Liu, L. F. 263, 273
Loh, E. 196, 204
Lomakina, T. S. 282, 284, 285, 294, 296, 297, 299
Lomen, P. L. 341, 352
Longoria, R. M. 35, 42
Lónai, P. 157, 173
Lopez, C. 330, 334, 378, 383
Loudy, D. E. 95, 101
Love, T. 3–11
Lovenberg, W. 336, 349
Lovett, E. J. 183, 202
Lovrien, R. E. 267, 274
Löwkvist, B. 109, 122
Lowry, O. H. 226, 232
Lowy, D. R. 317, 320
Lozoya-Saldana, H. 36, 42
Lu, L. W. 340, 351
Lu, P. 195, 204
Lubbers, C. M. 330, 334
Lubin, F. 251, 259
Lui, M. S. 39, 42, 45–52, 55, 57, 58, 60, 61, 64, 65, 67, 68, 70, 79, 86, 88, 156, 157, 159, 162–164, 167, 168, 170, 172–175, 180, 181, 195, 199, 201, 204, 205, 208, 212, 214–216, 218–220, 222, 223, 225–233, 242, 388, 389, 400, 419–421, 427
Lui, S. 163, 174
Luk, G. D. 95, 101, 116, 124
Lumme, P. 129–132, 137
Lumsden, A. B. 96, 101
Lund, P. 233, 242
Luporini, G. 146, 153
Lynch, R. G. 315, 319

Maas, W. K. 103, 119
Macara, I. G. 270, 274
MacDonald, J. S. 144, 146, 152, 197, 205
Machado de Domenech, E. E. 418, 427
Macklin, A. W. 360, 373
Madar, J. 343, 347, 353, 354
Maderazzi, M. 257, 260
Maksymiuk, A. 188, 203
Malspeis, L. 48, 55, 65, 67, 68, 70, 88
Malt, R. A. 93–102
Maly, K. 247–261
Mamaev, S. V. 289, 298
Mamont, P. 116, 117, 124
Mamont, P. S. 108, 112, 113, 116, 118, 121, 123, 124, 126, 130, 136, 137
Manak, R. C. 323, 332
Mandel, P. 192, 203, 204
Manglitz, D. 418, 421, 425, 426
Maniatis, T. 303, 318
Mano, Y. 381, 384
Mansell, M. M. 385, 387, 390, 399, 400
Mar, E.-C. 377, 378, 383
Margolin, J. 343, 353
Mariani, B. 358, 370, 373
Mariani, B. D. 14, 24, 370, 375
Marinetti, G. V. 270, 274
Marnett, L. J. 96, 102
Maroun, J. 188, 203
Marquez, V. E. 30, 31, 41, 48–50, 55, 60, 64, 65, 68, 70, 72–74, 88, 157, 174
Marr, J. J. 328, 329, 333
Marsh, J. C. 9, 11
Marsoni, S. 48, 55, 65, 67, 88
Martin, D. G. 157, 173, 179, 201
Martin, D. S. 198, 205
Martin, D. W., Jr. 326, 327, 332
Martin, W. H., Jr. 103, 119
Martinez, H. M. 104, 120
Marton, L. J. 94, 101, 104, 116, 120, 123, 124, 136
Marzluff, W. F. 303, 318
Mason, D. J. 337, 349
Masters, J. N. 6, 10
Matlin, K. 406, 415
Matsuda, T. 30, 41
Matsufuji, S. 109, 112, 122, 123
Marsui, T. 257, 260
Matsuzaki, S. 96, 101
Maurer, B. J. 6, 10
Maurer, T. C. 133, 138

Maybaum, J. 31, 41
Mayer, G. D. 100, 102
Mayhew, E. 302, 318
Mayor, F. 243
McBride, J. T. 29, 40
McCann, P. P. 93–97, 100, 101, 102, 112, 113, 116, 123, 124, 126, 136
McClung, H. W. 29, 40
McComb, R. B. 418, 427
McConlogue, L. 108–111, 118, 121, 126, 137
McCracken, J. 144, 149, 152
McCredie, K. B. 341, 352
McCullough, J. L. 9, 11
McDonald, C. 335, 336, 349
McDougall, K. J. 103, 119
McGill, S. M. 109, 122, 130, 137
McGovren, J. P. 184–188, 191, 193, 202, 203, 225, 231
McGuire, J. 5
McIlhinney, A. 105, 111, 120
McKeehan, W. L. 251, 259
McKernan, P. A. 29–43
McLaughlin, P. J. 110, 114, 122
McNamara, D. J. 340, 351
McParland, K. 286, 297
McPartland, R. P. 179, 185, 201, 208, 222
Mead, J. A. 8, 11
Meck, R. A. 182, 183, 201, 202
Medina, D. 340, 351
Medina, W. D. 6, 10, 358, 372, 373
Meeker, B. E. 157, 164, 171, 174
Meeker, L. D. 99, 102
Meinking, T. 182, 202
Meister, A. 182, 202, 235, 243
Mell, G. P. 17, 19, 21, 24, 25
Melvin, M. A. L. 126, 136
Menozzi, M. 267, 274
Mertes, M. P. 344, 353
Metcalf, B. W. 113, 114, 116, 123–125, 136
Meuwissen, H. 326, 332
Meyer, M. 14, 24
Micetich, K. 288, 298
Michaels, S. 248, 250, 259, 263, 273
Michell, R. H. 265, 266, 274
Mihich, E. 19, 130, 134, 137–139, 174, 413, 414, 416
Mikhailopulo, I. A. 323, 331
Miki, M. 431, 434
Mikkelsen, R. B. 263, 266, 273
Mikles-Robertson, F. 133, 138
Milburn, G. L. 315, 319
Milgrom, Y. M. 291, 298
Miller, D. S. 341, 352, 361, 374
Miller, J. P. 70, 88
Miller, P. 286, 297
Miller, P. S. 319
Miller, R. L. 323, 328–331, 333, 334
Miller, W. H. 323, 328–331, 333
Millonig, G. 264, 273
Mills-Yamamoto, C. 198, 205
Milman, H. A. 182, 202
Milner, J. A. 236, 243
Milstein, C. 314, 319
Mini, E. 3–11
Minna, J. D. 6, 11, 358, 373
Minocha, R. 99, 102
Mirand, E. A. 174
Mishenina, G. F. 282, 297
Mishra, L. C. 8, 11
Misiorny, A. 38, 42
Miskimen, J. 103, 119
Mitchell, B. S. 396, 401
Mitchell, J. L. A. 112, 123
Mittleman, B. 333
Mizuno, K. 30, 41
Mkrtychian, Z. S. 291, 298
Moccio, D. M. 358, 370–372, 375
Moertel, C. G. 144, 145, 148, 149, 152, 153
Mohandas, T. 340, 341, 343, 351, 352
Molnar, Z. 418, 426
Momparler, L. F. 342, 343, 353
Momparler, R. L. 337, 339, 341–343, 349–353
Monks, A. 421, 427
Montgomery, J. A. 323, 325, 327, 331, 333, 371, 375, 385, 388, 394, 395, 398, 400, 401
Monto, R. W. 23
Moolenar, W. H. 255, 260
Moore, E. C. 385, 392, 399
Moore, G. E. 144, 150, 152
Moore, R. V. 35, 42
Moorhead, E. L. 144, 152
Mordyanov, N. N. 291, 298
Mori, M. 111, 122, 233, 237, 242
Morisset, J. 97, 102
Morita, M. 431, 434
Moroson, B. A. 3–11, 358, 372, 373
Morris, D. R. 100, 102, 103, 119, 120, 123, 129–132, 134, 136, 137
Morris, H. P. 46, 47, 54, 55, 58, 60, 64, 65, 156, 163, 164, 172, 174, 175, 207, 222, 226, 232, 340, 351, 385, 388, 389, 399, 400, 426
Moses, P. A. 6, 10
Moxley, T. E. 326, 332
Moyer, J. D. 169, 175, 420, 421, 427
Muggia, F. M. 182, 202
Muindi, J. F. R. 358, 373
Munro, J. B. 391, 400
Murakami, A. 319
Murakami, M. 144, 152
Murakami, Y. 108, 109, 112, 121–123
Muramatsu, T. 405, 415

Murden, S. 105, 111, 120
Murphree, S. A. 263, 273, 285, 399
Murphy, M. L. 194, 204
Murphy, S. B. 372, 373
Murphy, W. K. 185, 186, 188–190, 203
Murray, B. K. 29–43
Mustaev, A. A. 291, 298
Mutter, G. 196, 204
Myoda, T. T. 6, 10
Myška, V. 336, 349
Myzina, S. D. 284, 285, 297

Nadler, S. 144, 150, 152
Nagai, H. 14–16, 24
Nagai, J. 94, 98, 101
Nagamine, K. 431, 434
Nagano, H. 381, 384
Nagasue, N. 431, 434
Naik, S. R. 191, 203
Nakagawa, T. 257, 260
Nakajima, Y. 429, 433
Nakamura, T. 96, 101
Nakano, G. 96, 101
Nakao, Y. 257, 260
Nakayama, K. 377, 380, 383, 384
Narasimham, S. 406, 415
Narayanan, V. L. 30, 41, 67, 87, 156, 157, 164, 170, 174
Narurkar, L. M. 338, 350
Nass, M. M. K. 94, 101
Natale, P. J. 236, 243
Nathan, C. F. 182, 202
Nathans, D. 108–111, 118, 121, 126, 137
Natsumeda, Y. 39, 42, 45–65, 67, 70, 79, 86, 88, 170, 175, 199, 205, 208, 216, 218, 219, 222, 223, 225, 226, 230, 232
Natuzzi, E. 95, 101
Nau, D. 116, 124
Nayak, R. 196, 204
Nebrat, L. T. 292, 299
Neef, V. G. 14, 21, 24
Neidle, S. T. 259
Neil, G. L. 157, 159, 168, 169, 173, 179–205, 208, 222, 225, 231, 326, 332, 341, 352
Nelson, D. J. 328, 329, 333
Nelson, G. A. 268, 274
Nelson, J. D. 157, 174, 373
Nelson, J. S. 342, 353
Németh, L. 157, 172
Nersesova, L. S. 291, 298
Nesbit, M. 341, 352
Nesterikhin, Y. E. 288, 297
Nevinsky, G. A. 291, 299
Nguyen, B. T. 39, 43
Nichol, C. A. 4, 9, 13, 23, 360, 361, 365, 367, 370, 373, 374
Nicholas, C. A. 230, 232
Niedzwicki, J. G. 397, 401
Niethammer, D. 358, 370, 373, 375
Nigro, N. D. 95, 96, 101, 102
Nikula, P. 125–139
Nimec, Z. 358, 373
Nishimura, M. 144, 152
Nishizuka, Y. 256, 257, 258, 260
Njoko, G. 266, 274
Nogovitzina, G. K. 284, 285, 297
Noguchi, T. 108, 111, 121, 122
Nolan, P. A. 421, 427
Noren, J. O. 38, 42
North, J. A. 29–43
North, T. W. 323, 326, 328, 331
Novozhilov, S. Y. 288, 297
Nowack, J. 418, 426
Nunberg, J. H. 5, 10

Obata, H. 429, 433
Obenrader, M. F. 109, 122
Oberg, B. 38, 42, 317, 320
Oberhuber, H. 247–261
O'Brien, R. 9, 11, 144, 149, 152
O'Brien, T. G. 109, 122
O'Ceallaigh, D. 95, 101
O'Dwyer, P. J. 48, 55, 65, 67, 88
Oettgen, H. F. 194, 204
Ogawa, M. 144, 152
Ogilvie, K. K. 378, 384
Ogino, S. 30, 41
Oguro, M. 381, 384
O'Hare, P. 382, 384
Ohkawa, J. 405, 415
Ohnoshi, T. 370, 375
Ohnuma, T. 185–187, 190, 191, 194, 203, 204, 370, 375
Ohto, M. 431, 434
Ohtsuki, T. 429, 433
Okasaki, N. 429, 433
Oknishi, K. 429, 433
Okuda, K. 429, 431, 433, 434
Olah, E. 39, 42, 45, 46, 49, 50, 52, 55, 57, 58, 61, 64, 67, 68, 70, 79, 86, 88, 155–175, 208, 222, 225, 226, 230, 232, 419–421, 427
Olin, E. J. 337, 345
Olsson, A. 429, 433
Olsson, I. 24, 116, 124, 340, 351
Ono, M. 109, 121
Opetz, M. 413, 416
Order, S. E. 429, 433
Oredssdon, S. M. 94, 101, 114, 116, 124
Osborn, M. J. 13, 14, 23, 24

Ostrander, M. 377, 378, 383
Ota, K. 144, 152
Otting, F. 22, 25
Otto, M. J. 330, 334
Ovchinnikov, Y. A. 291, 299
Ovejera, A. A. 157, 173, 184, 202, 208, 222
Owen, M. C. 254, 260
Oxford, J. S. 36, 42
Oyama, A. 144, 152
Ozols, R. F. 257, 260

Pacha, I. O. 291, 292, 298, 299
Padgett, R. A. 196, 204
Pain, V. M. 247, 259
Pajak, T. 149, 153
Pajunen, A. E. I. 105, 108, 109, 111, 114, 121
Paladini, A. C. 407, 416
Palek, J. 266, 274
Palmiter, R. D. 340, 351
Pályi, I. 158, 174
Pamakcu, R. 168, 175, 181, 199, 201
Panet, R. 254, 260
Panettiere, F. 144, 149, 152
Paris, S. 254, 255, 260
Parker, L. 358, 373
Parker, S. H. 385, 399
Parkman, R. 326, 332
Parks, R. E., Jr. 323, 326, 331, 332, 395, 401
Parslow, T. G. 315, 319
Passamani, E. 164, 175, 385, 399
Pasternak, C. A. 335, 348
Pater, J. 188, 203
Pater, J. E. 188, 203
Paterson, A. R. P. 181, 198, 201, 205, 327, 332
Paterson, S. J. 15, 16, 24
Pathak, S. N. 133, 138
Paull, K. D. 30, 41, 67, 87, 157, 164, 170, 174
Pausch, J. 233–243, 417–419, 421, 426, 427, 429–434
Pawlak, K. 39, 43
Pegg, A. E. 93, 101, 104, 105, 108–111, 113, 114, 116, 120–123, 129, 130, 135, 137, 139
Pelczar, M. J., Jr. 103, 119
Penman, S. 339, 350
Penta, J. 184, 185, 202
Perevodchikova, N. I. 152, 153
Perkins, J. P. 4, 10, 17, 24
Persson, L. 105, 108–110, 114, 121, 122
Peters, C. J. 39, 42
Petzold, S. J. 39, 42
Peyrieras, N. 406, 415
Philipson, L. 38, 42
Phillips, A. W. 15, 16, 24
Phillips, J. 417, 418, 422, 426
Pichko, N. P. 302, 303, 305, 318, 319
Pickering, M. V. 30, 39, 41, 67, 87
Piercey, M. J. 191, 193, 203, 225, 231
Pillwein, K. 45–65, 67, 68, 70, 79, 88, 230, 232
Pine, M. J. 133, 138
Piskala, A. 337, 340, 342, 344–346, 349, 352–354
Pispa, J. 128, 130, 132, 137
Pitha, J. 317, 320, 337, 344, 349
Pitha, P. M. 317, 320
Pithová, P. 337, 344, 349
Pitman, S. 358, 373
Pitot, H. C. 338–340, 347, 350,, 351, 354
Plagemann, P. G. W. 327, 332, 337, 350
Pla Illa, R. P. 360, 374
Pleshkewych, A. 133, 138
Pletnyov, A. G. 291, 299
Plevová, J. 336, 349
Pliml, J. 341, 352
Ploegh, H. 406, 415
Plowman, J. P. 30, 41, 48, 55, 65, 67, 69, 70, 82–84, 87, 88, 157, 164, 170, 174
Podyminogin, M. A. 289, 298
Pogolotti, A. L., Jr. 421, 427
Pohjanpelto, P. 103, 119, 120
Pollara, B. 326, 332
Pommier, Y. 71, 89
Ponsell, K. 109, 122
Poore, G. A. 157, 167, 174, 175
Poplack, D. G. 187, 203
Popova, V. S. 305, 319
Popper, H. 415, 416–418, 426, 433, 434
Port, L. A. 103, 119
Porter, A. G. 320
Porter, C. 413, 414, 416
Porter, C. W. 93, 94, 100–102, 130–134, 137, 138
Portlock, C. S. 6, 11
Pösö, H. 105, 108, 109, 111, 114, 120, 121, 123, 130, 131, 138
Poster, D. S. 184, 195, 202
Potter, V. R. 318
Pouysségur, J. 254, 255, 260
Powell, K. L. 377, 383
Powers, S. G. 235, 243
Pozdnyakov, V. A. 291, 299
Praga, C. 146, 152, 153
Prajda, N. 47, 55, 65, 157, 163, 164, 168, 173, 175, 195, 204, 207–223, 225–227, 231
Prakash, N. J. 99, 100, 102, 113, 116, 117, 124
Prakash, N. K. 130, 137
Pratt, E. A. 185–187, 203

Prentice, H. G. 326, 332
Prestyako, A. W. 298
Price, L. A. 360, 374
Pritchard, M. L. 105, 114, 120
Prouty, W. F. 109, 122
Prozjaleck, W. 257, 258, 261
Prus, K. L. 333
Prusiner, P. 36, 42
Prusoff, W. H. 330, 334
Pryhitka, G. 270, 274
Pugh, R. 144, 152
Pullman, B. 331
Purifoy, D. J. M. 377, 382–384
Puschendorf, B. 247, 250–252, 259
Pushkarskaya, N. L. 36, 42
Putzer, H. 247, 250, 251, 259

Quarles, J. M. 29, 40

Rabinkov, A. G. 291, 298
Radatus, B. K. 378, 384
Ragab, A. H. 360, 374
Rahim, S. G. 330, 334
Raina, A. 103, 105, 119, 120
Rainey, P. 329, 333
Rajalakshmi, S. 431, 434
Rall, T. W. 332
Randall, R. J. 226, 232
Randerath, K. 340, 351
Randolph, J. C. 4, 10
Rao, P. M. 431, 434
Rapado, A. 333
Raper, J. H. 15, 16, 24
Raška, K. 337, 339, 349, 351
Rašková, H. 335, 336, 348, 349
Rasenack, J. 233–243
Rauscher, F. 343, 353
Rautian, S. G. 288, 297
Rawlings, C. J. 250, 261
Raymond, R. 343, 353
Raz, A. 263, 268, 273
Read, E. 110, 111, 122
Reardon, M. A. 48, 60, 65, 67, 70, 79, 88, 157, 163, 168, 173, 195, 199, 204, 205, 208, 212, 214–216, 218, 220, 222, 225–227, 231
Rebuck, J. W. 23
Reck, L. J. 196, 204, 205
Recktenwald, L. 409, 413, 414, 416
Reddy, M. P. 319
Reeves, R. 312, 319
Reeves, W. J. 144, 152
Reichman, M. 339, 350
Reichman, U. 378, 383
Reiffen, K. A. 235, 242, 417–421, 426, 427
Reilly, H. C. 207, 222
Reineke, L. M. 337, 349
Reitemeier, R. J. 144, 145, 149, 152
Reitman, M. L. 409, 416
Remmer, H. 426, 433, 434
Ren, W-Y. 328, 333
Renard, J. 361, 374
Reutter, W. 405–418, 425, 426
Revenkar, G. R. 29–43
Reverdatto, S. V. 292, 299
Rey, D. A. 394, 400
Reyes, P. 14, 17, 18, 24, 25
Reynolds-Vaughn, R. 333
Rhoads, C. P. 207, 222
Rice, A. 329, 334
Richards, H. H. 327, 332
Richards, R. G. 372, 375
Richardson, C. C. 302, 315, 318
Riches, P. 338, 339, 350
Rideout, J. L. 323, 331–334
Riecken, E.-O. 101
Riegler, F. 257, 260
Riggs, A. D. 340, 343, 347, 351
Rimm, A. A. 144, 152
Ring, B. J. 194, 204
Ringsdorf, H. 247–261
Rivard, G. E. 342, 343, 353
Rivest, R. S. 6, 11
Roach, B. L. 186, 203
Roberts, J. 195, 199, 204
Roberts, J. D. 385, 399
Roberts, J. J. 247–261
Robertson, J. S. 315, 320
Robins, R. K. 29–43, 48, 49, 55, 64, 65, 67, 70, 79, 81, 87–89, 157, 159, 164, 170, 174, 186, 203, 326, 332, 395, 401
Robinson, J. W. L. 101
Rodriguez, V. 341, 352
Rogan, A. M. 257, 260
Romanenko, V. P. 278, 280, 296
Romashcenko, A. G. 291, 298
Romero, R. A. 406, 415
Ronan, A. M. 99, 102
Roomi, M. W. 431, 434
Roos, A. 249, 259
Rose, L. M. 342, 353, 420, 427
Rosebrough, N. J. 226, 232
Rosen, F. 4, 9
Rosen, F. S. 326, 332
Rosenbluth, R. J. 182, 202
Rosenfeld, H. 195, 199, 204
Rosenfeld, H. J. 103, 119
Rosengren, E. 105, 109, 121, 122
Rosowsky, A. 5, 10
Ross, D. A. 58, 60, 65
Ross, J. S. 93–102
Rothenberg, B. 255, 260

Rouse, W. 257, 260
Rowe, T. C. 263, 273
Rozengurt, E. 254, 255, 260
Rozhin, J. 95, 96, 101
Rubio, R. 332
Ruddle, F. H. 6, 10
Rudigier, J. 235, 236, 238, 242, 243, 413, 416–418, 420, 425
Rundles, R. W. 361, 374
Ruohola, H. 129–132, 134, 137, 138
Russell, D. H. 105, 111, 113, 120, 123, 132, 138
Russell, W. E. 96, 97, 102
Ruth, J. L. 377, 380, 383, 384
Rutman, R. J. 247, 259
Ruysschaert, J. M. 270, 274
Ryan, J. A. 157, 159, 168, 169, 173, 179, 182, 201, 202, 208, 222, 225, 232
Rybski, J. A. 112, 123
Rychlik, I. 335, 348
Ryte, A. S. 301–320
Ryte, V. C. 281, 282, 296, 297

Sadee, W. 31, 39, 41, 43
Sagar, S. S. 323, 331
Sager, R. 340, 351
Saisho, H. 431, 434
Sakaguchi, K. 30, 41
Sakaguchi, S. 431, 433
Saku, M. 431, 434
Sakurai, Y. 30, 41
Salganik, R. I. 286, 297, 317, 320
Salser, J. S. 96, 102
Sambrook, J. 303, 318
Samson, J. 342, 353
Samson, N. K. 341, 352
Samukov, V. V. 278, 282, 289, 296, 297
Sanderson, A. 326, 332
San Diego, E. L. 144, 152
Santi, D. V. 329, 333, 421, 427
Saotome, N. 431, 434
Sardet, C. 255, 260
Sartorelli, A. C. 167, 175, 263, 273, 348, 385, 392, 399
Sato, A. 385, 388, 393–398, 400, 401
Sato, J. K. 13–25
Sato, S. 330, 333
Saunders, P. P. 30, 41, 67, 70, 79, 81, 88, 89
Sauter, S. 132, 138
Savi, G. 182, 202
Savinkova, L. K. 286, 297
Scanlon, K. 370, 375
Schabel, F. M., Jr. 167, 175, 207, 222, 326, 328, 332, 342, 353, 385, 399
Schachter, H. 406, 415
Schade, D. 185–188, 191, 203
Schaeffer, H. J. 323, 326, 330, 331, 334, 378, 384, 394, 400
Schaffer, P. A. 381, 382, 384
Schaffner, F. 415, 433
Scharschmidt, B. E. 429, 433
Schauer, R. 414–416
Schechter, P. J. 94, 101, 113–118, 123, 130, 137
Scheer, D. I. 358, 372
Scheffler, I. E. 103, 108–110, 114, 118, 120–122
Scheidl, F. 247, 250–252, 259
Schein, P. S. 144, 146, 147, 152, 153
Schenone, A. 105, 120, 127–129, 137
Schilsky, R. L. 4, 10
Schimke, R. T. 5, 7, 10, 11, 14, 24, 111, 118, 123, 124, 127, 137, 358, 363, 364, 370, 373–375
Schindler, J. 116, 124
Schinitsky, M. R. 167, 175
Schirlin, D. 114, 124
Schlesinger, B. 255, 260
Schmidt, G. 387, 400
Schneider, F. 235, 242, 417–421, 426, 427
Schneller, S. W. 396, 397, 401
Schnipper, L. E. 381, 384
Schochetman, G. 385, 391, 399
Scholtissek, C. 36, 42
Schornagel, J. A. 6, 11
Schornagel, J. H. 358, 373
Schreur, P. J. K. D. 191, 193, 203, 225, 231
Schroeder, J. M. 148, 153
Schuldiner, S. 254, 255, 260
Schultz, P. G. 289, 298
Schulz-Holstege, C. 235, 242, 417–422, 425–427
Schumm, D. E. 340, 351
Schutt, A. J. 144, 145, 148, 149, 152, 153
Schwartz, H. 248, 250, 259
Schwartz, M. K. 194, 204
Schwartz, R. T. 406, 415
Schwender, C. F. 394, 400
Schwender, L. F. 323, 326, 331
Scott, C. W., Jr. 360, 374
Seaver, S. S. 420, 427
Sebestyén, J. 157, 173
Sebolt, J. 157, 163, 168, 173, 180, 181, 195, 199, 201, 204, 205, 208, 212, 214–216, 218–220, 222, 223, 225–227, 230, 231, 233, 242
Sedwick, W. D. 357–375
Seegmiller, J. F. 326, 332
Seely, J. E. 105, 108–111, 113, 114, 120–123
Segal, H. L. 406, 415
Seifert, J. 418, 426

Seifertová, M. 338–340, 347, 350, **351**
Seiler, N. 116, 117, 124
Sellei, C. 157, 172
Sem, P. C. C. 185–188, 202
Seno, T. 358, 373
Seppänen, P. 100, 102, 108, 117, **118, 121,** 124, 126, 127, 129–139
Serif, G. S. 411, 416
Sezzi, M. L. 257, 260
Shabarova, Z. A. 282, 288, 297
Shaddix, S. C. 342, 353, 385, 399
Shank, R. P. 193, 204
Shannon, W. M. 326, 328, 332
Shapiro, C. M. 147, 153
Shapiro, L. J. 340, 341, 343, 351, **352**
Shapiro, R. A. 194, 204
Sharma, D. S. R. 431, 434
Sharma, O. K. 36, 38, 42
Sharma, R, 378, 383
Sharova, N. K. 319
Sharp, P. A. 310, 319
Sheetz, M. P. 266, 267, 274
Shelpakova, E. L. 282, 297
Shen, J.-C. 431, 434
Sheridan, M. A. 157, 173, 184, **202, 208,** 222
Sheshegova, E. A. 302, 318
Shimura, K. 94, 98, 101
Shigesada, K. 233, 236, 242, 243
Shinagawa, T. 431, 434
Shinitzky, M. 263, 268, 273
Shiotani, T. 163, 174
Shoda, H. 96, 101
Shoemacher, D. D. 48, 55, 65, 67, **88**
Shubina, T. N. 282, 297
Shutt, R. 337, 349
Siat, M. 116, 124
Sidwell, R. N. 385, 399
Sidwell, R. W. 29, 30, 35, 39, **40–42, 67, 87**
Siegel, S. 339, 351
Siegelmann, S. S. 429, 433
Sieger, L. 341, 352
Sies, H. 201, 204, 223, 242, 243
Sigel, C. W. 360–362, 373, 374
Siimes, M. 117, 124, 133–135, 138, **139**
Silber, R. 14, 24
Silverberg, I. 149, 153
Simmons, W. S. 360, 373
Simon, L. N. 29, 35, 40
Simonsen, C. C. 7, 11, 14, 24
Sinervirta, R. 108, 118, 121, 126, **127, 137**
Singer, K. H. 327, 332
Singer, S. J. 266, 267, 274
Sinks, L. F. 194, 204
Sirotnak, F. M. 358, 370–372, 375
Sjoerdsma, A. 94, 100, 101, 102, **113–118,** 123, 130, 137, 336, 349
Skeel, R. T. 358, 373
Skipper, H. E. 200, 205, 207, 222
Škoda, J. 335–354
Skoog, L. 390, 400
Skulachev, V. P. 296
Škutchan, J. 344, 353
Slack, N. 144, 150, 152
Slate, D. L. 370, 375
Slavik, M. 336, 349
Sloan, B. J. 9, 11
Šmachel, O. 335, 349
Smith, A. L. 67–70, 73, 74, 88
Smith, D. F. 235, 242, 417, 418, 426
Smith, F. P. 147, 153
Smith, I. E. 358, 373
Smith, J. 95, 101
Smith, J. A. D. 40
Smith, K. O. 378, 384
Smith, L. 144, 152
Smith, P. L. 263, 273
Smith, R. A. 36, 38, 40, 42
Smith, R. B. 187, 203
Smithers, D. 420, 427
Smart, J. 335, 348
Smyth, J. F. 326, 332, 358, 373
Smythe, T. 144, 145, 152
Sneath, P. H. A. 103, 119
Snell, E. E. 103, 119
Snyder, L. M. 266, 274
Snyder, S. H. 105, 111, 120
Soares, N. 187, 203
Sobrero, A. 3–11
Sokolova, N. I. 282, 297
Solomon, T. E. 97, 102
Sols, A. 418, 427
Solter, A. W. 387, 400
Šorm, F. 335, 337–342, 344, 347–353
Šormová, Z. 337, 349
Southern, E. M. 126, 137
Sowers, L. C. 372, 375
Sparkes, R. S. 340, 351
Spector, T. 329, 333, 378, 384
Spengler, B. A. 5, 10
Spitz, S. A. 319
Spitzy, K. H. 89
Sporn, M. W. 256, 260
Sprinkle, D. J. 95, 101
Spurgin, G. E. 252, 260
Sridhar, K. S. 185, 186, 190, 191, 203
Srimatkandada, S. 3–11, 358, 372, 373
Srivastava, P. C. 29, 30, 32, 39–41, 48, 49, **55, 64,** 65, 67, 70, 87, 88, 157, 159, 164, **170,** 174
Staquet, M. J. 152
Starikov, V. V. 291, 299
Stark, G. R. 127, 137, 196, 204, 418, 420, **426,** 427

St.-Arneault, G. 418, 427
Starobrazova, M. G. 291, 298
Staubus, A. E. 48, 65, 68, 70, 88
St. Clair, M. H. 378, 381, 384
Steglich, C. 103, 120
Stenberg, K. 38, 42
Stening, G. 38, 42
Stephanovich, L. E. 302, 303, 305, 318, 319
Stephenson, M. L. 315, 319
Stephenson, P. A. 194, 204
Stetler, D. A. 113, 123
Stewart, D. J. 188, 203
Stewart, J. C. 185–188, 202, 203
Stickney, D. R. 360, 373
Stier, A. 252, 259
Stock, C. C. 207, 222
Stockmann, M. I. 288, 297
Stoeckler, J. D. 323, 326, 332, 395, 401
Stoller, R. G. 337, 349
Stone, D. 14–16, 24
Stone, T. W. 192, 203
Stopford, C. R. 328, 333
Stott, P. B. 144, 152
Streeter, D. G. 29–31, 35, 39–41, 67, 70, 87, 88
Streightoff, F. J. 157, 174
Stridh, S. 38, 42, 317, 320
Stroehlein, J. R. 188, 203
Struck, R. F. 385, 399
Stubblefield, E. 385, 399
Stubbs, M. 46, 64, 156, 172
Subak-Sharpe, J. H. 381, 384
Sugimoto, Y. 270, 274
Suits, R. D. 418, 426
Sugino, Y. 344, 353
Sugar, J. 158, 167, 174, 175
Suhadolnik, R. J. 337, 340, 349
Sullivan, M. P. 341, 352
Summerton, J. 315, 319
Sundaralingam, M. 36, 42
Sundler, F. 109, 110, 114, 122
Sung, J.-L. 431, 434
Sunkara, P. S. 100, 102, 113, 116, 117, 124
Suzuki, F. 109, 121
Suzuki-Hori, C. 381, 384
Švehla, C. 335, 349
Švorc, J. 335, 349
Swaney, J. J. 341, 352
Sweeney, M. J. 157, 163, 173, 174
Swyryd, E. A. 418, 420, 426, 427
Syrkin, A. B. 152, 153
Szabó, I. 157, 173
Szymanski, P. 110, 111, 122

Tabor, C. W. 93, 101, 103, 120
Tabor, H. 93, 101, 103, 120
Tagnon, H. J. 152
Tai, A. W. 385, 399
Takada, M. 30, 41
Takahashi, I. 370, 375
Takeda, E. 46, 47, 58, 64, 65, 68, 70, 88, 156, 162–164, 172, 175, 199, 205, 217, 223, 385, 399
Takeda, Y. 109, 121
Takenoshito, S. 96, 101
Takiguchi, M. 111, 122
Takusagawa, F. 49, 65
Tallal, L. 194, 204
Talley, R. W. 144, 152
Tamaoki, T. 4, 10
Tamas, J. 157, 164, 173
Tamura, G. 406, 415
Tan, R. S. 377, 383
Tan, C. C. 194, 204
T'Ang, A. 385, 392, 393, 399
Tang, A. H. 191, 193, 203, 225, 231
Tang, E. 195, 204
Tardiff, C. 108, 112, 118, 121, 123, 126, 136
Tartakoff, A. 406, 416
Tatibana, M. 111, 122, 233, 236–238, 242, 243
Tattersall, M. H. N. 358, 371, 373, 375
Tauber, R. 405, 407, 413, 415, 416
Taylor, G. A. 4, 10, 358, 373
Taylor, S. A. 185–187, 190, 191, 203
Taylor, S. M. 340, 341, 343, 347, 351, 352
Teich, N. M. 317, 320
Ten Eyck, L. G. 29, 40
Teplova, N. M. 293, 299
Tewey, K. M. 263, 273
Thannhauser, S. J. 387, 400
Thiele, J. 127, 137
Thomas, H. J. 323, 331, 420, 427
Thomas, J. K. 252, 259
Thompson, H. J. 99, 102
Thompson, L. F. 326, 332
Thompson, M. G. 263–272
Thornthwaite, J. T. 183, 202
Threlfall, G. 320
Thuong, N. T. 315, 319
Tikhonenko, A. S. 303, 314, 318
Tlsty, T. 358, 370, 373
Todaro, G. J. 256, 260
Tofanetti, O. 182, 202
Torkkeli, T. K. 109–111, 122, 126, 137
Tormey, D. C. 185–188, 191, 199, 203, 205, 219, 223
Touster, O. 406, 415
Towbin, H. 288, 297
Townsend, L. B. 326, 332, 396, 401
Tran-Thi, T.-A. 417, 418, 422, 426
Traut, T. W. 196, 204

Tremblay, G. C. 236, 243
Tritton, T. R. 263, 267, 271, 273, 274
Trowbridge, I. S. 409, 416
Trump, D. L. 199, 205, 219, 223
Tseng, B. Y. 371, 375
Tseng, W.-C. 385, 394, 399
Tsien, R. Y. 255, 260
Tso, J. Y. 212, 222, 233, 243
Ts'o, P. O. P. 286, 297, 310
Tsuchiya, Y. 431, 434
Tsujino, M. 30, 41
Tsukagoshi, S. 30, 41
Tsunetomi, S. 431, 434
Tu, C. D. 279, 296
Tucker, W. 144, 152
Tulsiani, D. R. P. 406, 415
Tuominen, F. W. 317, 320
Turner, M. K. 385, 391, 399
Turner, R. W. 335, 348
Tuttle, J. V. 323, 328, 329, 332, 333
Tyagi, A. K. 103, 120
Tykva, R. 337, 349
Tyrey, S. J. 255, 260
Tzeng, D. Y. 46, 64, 68, 70, 88, 156, 159, 162–164, 172, 174, 175, 419–421, 427

Uddman, R. 109, 122
Ueland, P. M. 327, 333
Ueno, T. 431, 434
Uher, V. 335, 349
Umezawa, H. 98, 102
Urlaub, G. 5, 10

Vakrusheva, T. E. 293, 299
Valdivierso, M. 185, 186, 190, 203
Valenta, O. 335, 349
Valeriote, F. A. 157, 164, 171, 174
Valkó, É. 157, 173
Vályi-Nagy, T. 157, 173
Van Cott, A. C. 48–50, 55, 60, 64, 65, 67, 70, 72, 88
Van der Merwe, A. M. 144, 151
Van der Saag, B. T. 255, 260
Van Dorsselaer, V. 144, 124
Van Dyk, J. J. 144, 151
Van Eden, E. B. 144, 151
Van Hove, W. 360, 374
Vanier, M. 97, 102
Van Mouwerik, T. J. 199, 205, 219, 223
Van Obberghen-Schilling, E. 254, 260
Van't Reit, B. 157, 164, 170, 174, 385, 399
Vassalli, P. 406, 416
Vaughan, P. J. 377, 383
Veiko, V. P. 288, 297
Vella, G. 406, 415
Venditti, J. M. 340, 352
Venjaminova, A. G. 294, 299, 302, 318
Venkstern, T. V. 286, 297
Veno, W. 146, 152
Verham, R. 329, 334
Verhelst, G. 330, 334
Veselý, J. 335–354
Vevert, J. P. 113, 123, 125, 136
Viceps-Madore, D. 112, 123
Vick, N. A. 134, 139
Vigne, B. 254, 260
Villacorte, D. 182, 202
Virtanen, I. 103, 120
Vischer, P. 405, 409, 415
Visek, W. J. 236, 243
Vitols, K. S. 13–25
Vitto, L. 196, 204
Vlassov, V. V. 277–299, 301–320
Vogler, W. R. 341, 352
Vondergem, R. 251, 259
Von Hoff, D. D. 182, 187, 190, 193, 202, 203

Waalkes, T. P. 418, 426
Wahl, G. M. 127, 137, 196, 204
Walborg, E. F., Jr. 417, 426
Walker, R. 378, 383
Walker, R. T. 330, 334
Wallace, H. M. 96, 98, 99, 101, 102
Wallace, T. L. 257, 258, 261
Wallach, D. F. H. 263, 266, 273
Walsh, E. E. 29, 40
Walter, L. 418, 427
Wampler, G. L. 157, 164, 170, 174, 385, 399
Wang, A. L. 329, 334
Wang, C. C. 329, 334
Waring, N. J. 259
Warrell, R. P., Jr. 134, 139
Warren, L. 405, 415
Watenabe, K. 378, 383
Watson, G. 110, 111, 122
Watts, R. W. E. 230, 232, 333
Webb, T. E. 338, 340, 347, 350, 351
Weber, G. 31, 39, 41, 42, 45–65, 67, 68, 70, 79, 86, 88, 155–157, 159, 161–164, 167, 168, 170–175, 180, 181, 195, 199, 201, 204, 205, 207, 208, 211, 212, 214–223, 225–233, 242, 328, 333, 385, 388, 389, 399, 400, 417–421, 425, 427
Weber, K. 14, 24
Weckbecker, G. 417–427
Wei, R. 408, 416
Wei, T.-C. 431, 434
Weidemann, G. 413, 416
Weigle, W. O. 333

Weiner, H. L. 358, 373
Weiner, J. 149, 153
Weinmann, R. 333
Weintraub, H. 340, 351
Weiss, G. R. 185–188, 191, 203
Weiss, J. M. 109, 122
Weiss, J. W. 339, 350, 351
Weiss, W. 257, 258, 261, 431, 434
Welbourne, T. C. 182, 202
Welch, A. D. 4, 10, 335, 348
Wendler, P. A. 236, 243
Westermark, B. 256, 260
Wheeler, R. H. 183, 202
Whelan, R. D. H. 159, 174
White, J. C. 4, 10
Whitfield, J. F. 259
Whitford, T. W., Jr. 385, 399
Whitman, M. 270, 274
Whitmore, W. F., Jr. 100, 102
Whitney, P. A. 103, 120
Whyte, W. 6, 10
Whyte-Bauer, W. 4, 10
Wick, M. M. 385, 399
Wiedner, H. 323, 331
Wieland, O. 417, 425
Wilansky, H. 112, 123
Wilkening, J. 418, 426
Wilkinson, D. 347, 354
Wilkinson, D. S. 387, 400
Wilchek, M. 296
Wilkie, N. M. 381, 384
Williams, J. C. 156, 163, 172, 174, 207, 222, 226, 232, 342, 353, 417–419, 425
Williams, L. G. 235, 243
Williams, M. 342, 353
Williams, M. G. 186, 191, 193, 203, 225, 231
Williams, R. H. 157, 173, 174
Williams, T. 360, 362, 374
Williams-Ashman, H. G. 104, 105, 108, 113, 120, 121, 127–129, 137
Williamson, D. H. 112, 123
Williamson, R. C. N. 96, 102
Willoughby, E. W. 24
Willson, J. K. V. 168, 175, 181, 199, 201, 205, 219, 223
Wilman, D. E. V. 247, 254, 259
Wilson, A. Z. 35, 42
Wilson, C. B. 104, 120
Wilson, P. S. 95, 96, 101
Wilson, S. Z. 29, 31, 40
Wilson, V. L. 342, 352
Wilson, W. L. 144, 152
Wilson, Y. A. 30, 41, 48, 60, 65, 68, 70, 88
Winkler, J. R. 406, 415
Winzler, R. J. 417, 418, 425, 426
Wiseman, A. 94, 101, 131, 138
Wist, E. 398, 401
Witkowski, J. T. 29, 30, 35, 39–41, 67, 87
Wohlheuter, R. M. 327, 332
Wolberg, G. 327, 328, 332, 333
Wolf, H. 247, 250, 251, 259
Wolffschreiner, E. 247, 250–252, 259
Wonke, B. 326, 332
Wood, D. A. 144, 152
Wood, J. H. 187, 203
Wooley, J. L. 361, 374
Woolley, J. R. 360, 373
Woolley, P. V. 144, 146, 152
Wotring, L. L. 396, 401
Wright, G. E. 398, 401
Wright, J. E. 5, 10
Wu, L. 108, 111, 118, 121, 126, 137
Wu, R. 279, 296
Wuthrich, A. 264, 274
Wyde, P. R. 29, 40

Yamashita, K. 405, 415
Yang, K. H. 4, 10
Yang, L. 263, 273
Yap, H.-Y. 188, 189, 203
Yarmolynskaya, E. V. 278, 292, 296
Yarrington, J. T. 95, 101
Yatsyna, A. A. 36, 42
Yee, G. 263, 273
Yin, L. 247, 259
Yoshida, N. 30, 41
Yoshizawa, M. 30, 41
Yunis, A. 182, 201
Young, C. 360, 362, 374
Young, C. W. 198, 205, 361, 374, 385, 391, 399, 400
Young, D. 382, 384
Young, R. C. 257, 260
Young, V. 188, 203
Yunis, A. A. 183, 202
Yurchenko, L. V. 301–320
Yushkova, L. F. 292, 299
Yushok, W. D. 418, 427

Zagon, I. S. 109, 110, 114, 122
Zaharko, D. S. 4, 10
Zain, B. S. 338, 350
Zajíček, J. 346, 353
Zalkin, H. 212, 222, 233, 243
Zamecnik, P. C. 315, 319
Zandomeni, R. 333
Záruba, F. 335, 348
Zarytova, V. F. 277–299, 302, 303, 305, 314, 318, 319
Zaychikov, E. F. 291, 299

Zbarsky, I. B. 318
Zhen, Y. S. 157, 163, 168, 173, 180, 181, 195, 199, 201, 204, 208, 212, 214–216, 218, 220, 222, 223, 225–227, 231
Zhuk, R. A. 147, 153
Zimmerman, T. P. 327, 328, 332, 333
Zuckerman, L. B. 330, 333
Zuckier, G. 267, 271, 274
Zumwalt, R. W. 418, 426
Zupi, G. 257, 260
Zuzino, F. 182, 202
Zweibaum, A. 418, 426
Zwelling, L. A. 48, 50, 55, 64, 67, 70–72, 88, 89, 248, 250, 259, 263, 273, 288, 298
Zychlinski, L. 94, 101

SUBJECT INDEX

N-Acetylglucosamine (NAG) on echinocytosis blockade 268
α-Acetylinic ornithine inhibition of ODC 115
α-Acetylinic putrescine (5-hexyne-1, 4-diamine) inhibition of ODC 115
N-Acetylmannosamine kinase (EC 2.7.1.60) inhibition 413
N-Acetylneuraminate-9-P synthase (EC 4.1.3.20) inhibition 413
ACGTP (9-(2-hydroxyethoxymethyl) guanine triphosphate) 377
  competition with dGTP 380, 382
  competition with dTTP 379
  K_i values for different DNA polymerases 379
  PFA and 381
Acinetobacter L-glutaminase-L-asparaginase (EC 3.5.1.1) acivicin and 195
Acivicin
  actinomycin and 195, 219, 220
  activity spectrum 207
  antipyrimidine action 233–242
  ara-C and 196, 198
  assays 186
  biochemical pharmacology 179–182, 441
  clinical trials, phase I 185
  clinical trials, phase II 188–190
  combination chemotherapy 194–200
  -DBD on 3924A cells 165, 166
  dipyridamole and 199, 219
  direct enzyme inactivation 211
  enzyme inhibition pattern 181
  from *Streptomyces sviceus* broth 179
  5-FU and 196, 198
  D-galactosamine and 199
  L-glutaminase-L-asparaginase and 195
  myelosuppression by 186, 189, 190
  neurotoxicity 186, 188–194, 225
  on amidotransferase 180, 209, 210, 212–214, 217
  on L-aspartate transcarbamylase 186
  on CPS II 179, 182, 186, 196, 209, 212, 214, 233, 241, 242
  on CTP 227
  on CTP synthetase 157, 163, 179, 209, 212, 214, 227–229
  on deoxynucleotide pools 217
  on desamido-NAD:L-glutamine amido-ligase 182
  on different tissues 210, 212
  on FGAM synthetase 215, 217
  on FGAR amidotransferase 179
  on γ-glutamyltransferase 182
  on GMP synthetase 180, 212, 214, 217, 227–229
  on GTP 227
  on hepatoma 3924A 158, 159, 165, 208, 442
  on hepatoma 3924A and host liver 225, 227, 228
  on nucleotides 225–231
  on PRPP concentrations 215, 216
  on rat brain enzymes 225–231
  on ribonucleotide pools 168, 216, 218
  on UTP 199
  on XMP aminase 182
  paranoid schizophrenia and 230, 231
  pharmacokinetics 186–188
  plasma profiles 187
  preclinical antitumor activity 182–184
  preclinical toxicology 184, 185
  purine antimetabolites and 195
  pyrimidine antimetabolites and 196
  -resistant P388 cells 181
  salvage pathways and 217, 218
  structure 180
  synergistic effects 195, 219–221
  targets of 218
ACTTP (9-(2-hydroxyethoxymethyl) thymidine triphosphate) inhibition of HSV DNA polymerase 380
Actinomycin D–acivicin synergism 195, 219–221
Acycloguanosine inhibition of HSV DNA polymerase 380, 381
Acyclothymidine 397
Acyclovir (9-(2-hydroxymethyl) guanine)
  herpes virus treatment 330
  inhibition of DNA synthesis 441, 444
Adenine alkylation by addressed oligonucleotide derivatives 311
Adenine nucleotides *see* individual names
Adenine phosphoribosyltransferase (AMP:pyrophosphate phosphoribosyltransferase; EC 2.4.2.7)
  acivicin and 218, 220
  in *Leishmania donovani* 329
  in purine salvage 106, 107
  tiazofurin and 62, 63

Adenosine analogs and enzyme binding 325–329
Adenosine deaminase (EC 3.5.4.4)
absence, effects of 326
DCF on 326
EHNA on 326, 394
substrate specificity 323, 326
Adenosine kinase (EC 2.7.1.20)
5-azacytidine derivatives on 345
5-iodotubercidin on 326
in *Leishmania donovani* 329
substrate specificity 323–326
S-Adenosylhomocysteine hydrolase (EC 3.3.1.1)
C^3Ado on 327
Adox on 327
Ara-A on 328
Adenosylmethionine structure 127, 128
S-Adenosylmethionine decarboxylase (S-adenosyl-L-methionine carboxy-lyase; EC 4.1.1.50)
inhibition by bis(guanylhydrazones) 94, 128–130
polyamine biosynthesis and 104, 106, 107
target for chemotherapy 125–136
S-Adenosylmethionine synthetase (AT:L-methionine S-adenosyl-transferase; EC 2.5.1.6)
polyamine biosynthesis and 106, 107
ADP, DBD and VF-122 on 171
Adriamycin (doxorubicin)
in FAM chemotherapy 146
in Ftorafur chemotherapy 146
on plasma membrane 263–273
antiproliferative action 263, 270
comparison with TPA action 271
differences from other amphipaths 268, 273
induced echinocyte–discocyte transition 266
on Ca uptake by IOVs 268
on discocytes 267
on inositolphospholipid breakdown 270, 271
on L1210 cells 263
on phospholipid binding 270
Affinity labelling of biopolymers 277
Agmatine ureohydrolase (agmatine amidinohydrolase; EC 3.5.3.11)
putrescine synthesis and 104
Alkylating agents
growth inhibitory lesions by 254
potentiation of 5-FU therapy 143–151
oligonucleotide derivatives 281
on growth factors 256
on plasma membrane 247–259
on transport systems 251, 258
synergism with enzyme inhibitors 258, 259
Alkylation
complementary addressed 282–288
main points in tRNA 285
of biopolymers in Krebs II cells 308
of *E. coli* rRNA 283
of DNA 284
of nucleic acids 282
of tRNA 284
with ^{14}C oligonucleotide derivatives 308
yields of alkylated bases 284
Allopurinol riboside phosphorylation 329
Amidotransferase (amidophosphoribosyl-transferase; PRPPAT; EC 2.4.2.14)
acivicin on 180, 197, 209, 212–214, 218
azaserine on 209, 211, 213
DON on 182
in neoplasms 207
Amiloride-sensitive Na transport, N-mustard on 254
6-Amino-5-azacytidine as purine antagonist 345
4-Aminobutyrate: 2-oxoglutarate aminotransferase (EC 2.6.1.19)
inhibition 116
L-(αS,5S)-α-Amino 3-chloro-4, 5-dihydro-5-isoxazoeacetic acid *see* Acivicin 8-Aminoguanosine
inhibition of PNPase 395
on purine nucleoside phosphorylase 326
synergistic growth inhibition 396, 397
Ammonium ions
on CP synthesis 233, 236–238
pyrimidine synthesis stimulus by 236, 237
AMP deaminase (EC 3.5.4.6)
IMP and 53
tiazofurin and 54, 55, 62
Amphipathic drugs *see also* Adriamycin
bilayer couple hypothesis 267
calmodulin and 268
Antibiotics *see* individual substances
Antifolates *see also* Folate antagonists and Methotrexate
BW301U chemotherapy 357–372 *see* BW301U
drug development strategies 8
Antiglutamines *see also* individual drugs
in chemotherapy 207–221
inhibition mechanism 211
structures 208
Antimetabolites
chemotherapy 143–151, 155–172

-DBD combinations
rationale 164
synergistic responses 164–169, 171
kinetic classification 157–161
potentiation by alkylating agents 143, 155–172
uridylate trapping and 417–425
Antiviral
activities of ribavirin and selenazofurin 29–40
synergistic effects 31
agents 315
$(Ap)_5ACHRCl$ alkylation
of DNA 284
of rRNA 283, 284
Aphidicolin
antiviral chemotherapy and 383
inhibition of DNA polymerases 381, 382, 398, 441
9-β-D′-Arabinofuranosyladenine (adenine arabinoside; AraA) action loci 328
Arginase (L-arginine aminohydrolase; EC 3.5.3.1) ornithine synthesis and 106, 107
Arginine decarboxylase (L-arginine carboxy-lyase; EC 4.1.1.19) putrescine synthesis and 106, 107
Aromatic 2-chloroethylamines
alkylation mechanism 282, 301
attachment to oligonucleotides 278, 281
Asparagine, CNS toxicity and 193
L-Asparagine synthetase (EC 6.3.5.4) DON on 182
Aspartate transcarbamylase (aspartate carbamoyltransferase, ATCase; EC 2.1.3.2)
acivicin and 186, 196
CP and 235
in Lewis lung carcinoma 196
PALA inhibition of 181
Aspergillus nidulans polyamine requiring 103
AT-125 *see* Acivicin
ATP
content, lapachol and D-galactosamine on 421
DBD and antimetabolites on 168
depletion, echinocytosis and 266, 268–270
in hepatoma, acivicin on 216–218
dATP
DBD and antimetabolites on 169
IMPY and, on ribonucleotide reductase 394, 395
in hepatoma
acivicin on 217
tiazofurin on 58, 59
ATPases (EC 3.6.1.3) inhibition by NTP derivative 291
ATP:tRNA nucleotidyltransferase (EC 2.7.7.21)
inhibition by NTP derivative 291
5-Azacytidine (4-amino-1-β-L-ribofuranosyl-s-triazin-2)1H)-one)
cytostatic action 340
3-deazauridine and 337
enzyme induction 343
inhibition of pyrimidine synthesis 337
on antibody production 347
on DNA methyltransferase 340
on DNA synthesis 338, 339
on gastric secretion 346
on gene expression and differentiation 343
on human tumors 341
on liver polyribosomes 338, 339
on liver regeneration 338, 339
on mouse tumors 337, 338
on orotate phosphoribosyltransferase 338
on orotidine-5′-phosphate decarboxylase 338
on RNA synthesis 337, 339, 340
on rat hepatoma 337
on thymidine kinase 338
on thymidylate kinase 338
on tyrosine aminotransferase 347
on uridine kinase 337, 340
pyrazofurin and 337
structure 336
substituted derivatives 344, 345
5-Azacytosine arabinoside (1-β-D-arabino-furanosyl-5-azacytosine, Ara-AzC)
on L1210 leukemia 344, 345
structure 336
5-Aza-2′-deoxycytidine (5-AzCdR)
degradation sequence 342, 343
incorporation into mouse tissues 342
on L1210 leukemia 345
structure 336
synergisms on leukemias 342, 343
Azapyrimidine nucleosides, metabolism 335–348
Azaribine (6-azauridine-2′,3′,5′-triacetate)
herpes simplex infection and 335, 336
hyperaminoaciduria and 336
psoriasis and 336
smallpox and 336
thromboembolism and 336
Azaserine (O-diazoacetyl-L-serine)
mode of action 207
on 3924A growth 208
on amidotransferase 209–214
on CPS II 209
on CTP synthetase 209

on different tissues 210, 211
structure 180
6-Azauridine *see also* Azaribine
cancer chemotherapy and 335, 417–425, 429–433
on UTP content 419
structure 336
with D-galactosamine and 5-fluorouridine on human hepatoma 429–433
with D-galactosamine on rat hepatoma 420, 421, 423
Azoxymethane induction of colorectal cancers in mice 96
Base alterations in nucleoside analogs 324
Biopterins, GTP and 225, 230, 231
Bleomycin synergism with DFMO 98
Bredinin antitumor action 29, 30
Bromoconduritol (BC) inhibition of glycoprotein synthesis 406
5-Bromouracil on L1210 cells 397
Butylanilinouracil (BAU) inhibition of DNA polymerase 398
N^2-(p-n-Butylphenyl)-2′-deoxyguanosine (BuPdG) inhibition of DNA polymerase 398
BVdUTP (E-5-(2-bromovinyl)-2′-deoxyuridine triphosphate 377
competition with dTTP 379
K_i values for different DNA polymerase 379
BW301U, lipophilic folate antagonist 357–372
cytotoxicity mechanism 371
on animal tumors 362
on DNA synthesis 362–364
on 3T3R400 cells 363, 364, 369
phase I studies 365–369
pretreatment, MTX resistance and 365–368, 370, 439
properties compared with DDMP 360
structure 361
toxicity 364

Cadaverine (1,5-diaminopentane) synthesis, ODC and 109
Caerulein induction of pancreatic polyamines 97
Calcium
-induced inositolphospholipid breakdown 270
loading, echinocytosis 266–268
uptake by IOVs 268
Calcium leucovorin on BW301U toxicity 364
Calmodulin Ca binding, amphipaths on 268
Cancer *see* Human neoplasia, Neoplasia *and* specific neoplasias
Cancer chemotherapy *see* Chemotherapy
Carbamoyl-phosphate (CP)
acivicin and 240
determination 235
mitochondrial 233
ornithine on 237
pyrimidine synthesis and 233, 240
stimulation 238
synthesis blockage 238
Carbamoyl-phosphate synthetase I (CPS I; EC 6.3.4.16) inhibition 233, 237, 442
Carbamoyl-phosphate synthetase II (CPS II; EC 6.3.3.5)
acivicin on 179, 182, 186, 196, 209, 212, 214, 217, 220, 233, 241, 242, 442
ACTase and 196
azaserine on 209
in neoplasms 207
release from feedback inhibition 233, 240
stimulation by 6-aza UMP 236
Carcinogenesis, ODC activity and 95
Carcinoma *see also* Human
colon 38, tiazofurin on 81–84
Lewis lung
bredinin on 30
selenazofurin on 30
tiazofurin on 30, 81–84
rodent mammary, induction 99
Walker
BW301U on 362
N-mustard resistant and sensitive lines 248, 249
Carnitine function, MGBG and 133, 134, 136
CDP, DBD and VF-122 on 171
CDP reductase (EC 1.17.4.1) 156
in 3924A cells 162, 164
VF-122 on 164
Cell membranes, adriamycin on 263–273
Chemotherapy
acivicin 179–200
actinomycin and 219, 220
dipyridamole and 219
phase I trials 185, 186
phase II trials 188–190
synergism requirements 200
acyclovir 330
5-adenosylmethionine decarboxylase as target 125–136
adriamycin 146, 147
against autonomous self-stimulatory mechanism 256–258
antiglutamine agents 207–221
antimetabolite potentiation 143–151
5-azacytidine clinical 341

5-azadeoxycytidine clinical 343
azapyrimidine nucleosides and 335–348
blocking normal substrates 444
BW301U 366–372
combination 7, 145, 164, 171, 200, 219, 220, 442, 443
DDMP 360
drug transport and 447
enzyme targets 301, 441–444
experimental, sugar analogs and 423, 424
FAM 146
folate antagonists 357–372
Ftorafur 147
5-FU 144, 145, 148–150, 423
glycoprotein targets 445
guanine salvage enzymes and 47, 54, 61
guanylate biosynthesis and 46, 47
(bis)guanylhydrazones 134, 135
herpes 330
human hepatocellular carcinoma 429–433
IMP dehydrogenase and 46, 47
membrane component targets 444, 445
MTX 7, 358, 366–372
nitrosoureas 145
nucleic acid targets 445
nucleosides in 323–331
ODC inhibitors 93–100, 116–119
reevaluation of clinical effects 151
ribonucleotide reductase and 47
strategy 447
tiazofurin 45–64, 440
viral DNA polymerases and 377–383
Chinese hamster CHO cells
MTX resistant 5, 6
polyamine-requiring 103
tiazofurin on 81
Chlorambucil on Ehrlich ascites cells 250, 251
p-(N-2-Chloroethyl-N-methylamino)-benzaldehyde (OCHRCl)
binding to oligonucleotides 282
synthesis of ^{14}C compound 293, 294
4(N-2-Chloroethyl-N-methylamino)-benzylamine ($ClRCH_2NH_2$)
oligonucleotide derivatives 294
on influenza virus 305
synthesis of ^{14}C compound 294
2′, 3′-O-p-(N-2-Chloroethyl-N-methylamino)-benzylidene
oligonucleotide derivatives 282
synthesis of ^{14}C compound 294
4-(N-2-Chloroethyl-N-methyl)-aminobenzyl-5′-phosphamide oligonucleotide, synthesis of ^{14}C compound 295
p-Chloromercuribenzoate (pCMB) on DHFR 17, 20
5-Chlorouracil 397
Chlorpromazine
N mustard and 258
on Ehrlich ascites 257
Chromatin modification by alkylating oligonucleotide derivatives 303, 312–314
Chromosomes, DHFR gene on 5
Clobenoside (1-ethyl-5,6-di-O-p-chlorobenzyl-3-O-propyl-β-D-glucofuranoside)
on fucoprotein synthesis 412, 414
on fucose 409
on GDP-fucose 411
on sialic acid 409
structure 411
Colon cancer
HCT-8 subline, MTX resistant 6, 7, 438
ODC activity and 95
pdCpdGpACHRCl alkylation of tRNA 285
Creatine kinase (EC 2.7.3.2) inhibition
by NTP derivative 290
by photoaffinity labelling 291
CTP
acivicin on 216, 227–231
DBD and antimetabolites on 168
D-galactosamine on 421
lapachol on 420, 421
CTP:tRNA nucleotidyltransferase (EC 2.7.7.25) inhibition by NTP derivative 291
CTP synthetase (UDP:L-glutamine amido-ligase; EC 6.3.4.2)
acivicin on 157, 163, 168, 179, 197, 198, 227–229
assay of brain 226
azaserine on 209
in 3924A cells 162, 163
in neoplasms 207
dCTP
acivicin on 216
DBD and antimetabolites on 169
tiazofurin on 58, 59
Cytidine
alkylation by addressed obligonucleotide derivatives 311
metabolism, ribonucleotide reductase inhibitors and 390
Cytomegalovirus (CMV) DNA polymerase 377
dNTP analogs and 379
Cytosine arabinoside (cytararabine, ara-C)
acivicin and 196, 198
chemotherapy 143

3-deazauridine and 198
on leukemias 326, 345
pyrimidine nucleotide metabolism and 198
Cytosolic CP synthesis, uracil nucleotides and 238, 241
Cytotoxicity of antifolates 367–369

3-Deazaadenosine (c3Ado) modes of action 327
9-Deazaadenosine chemotherapy 330
3-Deazauridine
ara-C and 198
5-azacytidine and 337
Dehydro-α-acetylinic putrescine (*trans*-hex-2-en-5-ynl-1,4-diamine) inhibition of ODC 115
trans-3-Dehydro-α-difluoromethylornithine inhibition of ODC 115
Dehydro-α-difluoromethylputrescine inhibition of ODC 115
trans-3-Dehydro-α-monofluoromethylornithine inhibition of ODC 115
Dehydro-α-monofluoromethylputrescine inhibition of ODC 115
trans-3-Dehydroornithine inhibition of ODC 114
4-Deoxy-N-acetyl-D-mannosamine on sialic acid 409
3-Deoxy-3-amino-D-allose on fucose 409
Deoxycoformin (DCF) on adenosine deaminase 326, 327
Deoxycytidine deaminase (EC 3.5.4.5) tetrahydrouridine on 326
Deoxycytidine kinase (EC 2.7.1.74) 337
in rat hepatomas 328
specificity 323
1-Deoxy-ethylidene-D-galactose on sialic acid 409
2-Deoxy-2-fluoro-D-galactose on galactose 409, 414
6-Deoxy-6-fluoro-D-galactose
on fucose 409
on galactose 409, 414
2-Deoxy-D-galactose (2dGal)
on L-fucose 413
on glycoprotein synthesis 406
Deoxyguanosine synergistic growth inhibition 396, 397
1-Deoxy-mannojirimycin (DM) on glycoprotein synthesis 406
1-Deoxynojirimycin on glycoprotein synthesis 406
Deoxyribonuclease 1 (EC 3.1.4.5) 302
Deoxyribonucleotides with 5′ phosphate, solid state synthesis 292, 293
Deoxythioguanosine, 5-aza-2′-deoxycytidine synergism 342
Deoxyuridine incorporation
BW301U on 366–368, 372
MTX on 359, 366–368
Desamido-NAD:L-glutamine amido-ligase (EC 6.3.5.1)acivicin on 182
Desferal
ribonucleotide reductase inhibition potentiation 393, 395
synergistic growth inhibition 395, 396
DHPGTP(9-(1,3-dihydroxy-e-propoxymethyl) guanine triphosphate) 377, 378
competition with dGTP 380, 382
competition with dTTP 379
K_i values for different DNA polymerase 379
Diamine oxidase (EC 1.4.3.6) inhibition by bis(guanylhydrazones) 129, 130, 135
1,4-Diaminobutanone inhibition of ODC 114
trans-1,4-Diamino-2-butene inhibition of ODC 114
2,4-Diamino-6-(2,5-dimethoxybenzyl)-5-methylpyrido-(2,3-d)-pyrimidine *see* BW301U
2,4-Diaminopyrimidines, MTX and 360
Dibromodulcitol (DBD)
–acivicin
on 3924A 165, 166
on nucleotides 168
–antimetabolite combinations
rationale 164
synergistic responses 164–169, 171
kinetic classification 157, 158
on 3924A survival 157, 158, 165
on DNA 157
potentiation of metabolites 155–172
–pyrazofurin
on 3924A 165, 166
on nucleotides 168, 169
–tiazofurin
on 3924A 165, 167
on nucleotides 168, 169
–VF-122 on 3924A 165, 167
cis-Dichlorodiammoneplatinum, 5-aza-2′-deoxycytidine synergism 342
Dicyclohexylammonium sulfate (DCHA)
inhibition of spermidine synthase 94
synergism with DFMO 98
α-Difluoromethylornithine (DFMO)
animal studies 117
cell culture studies 115
clinical studies 117
combination chemotherapy 96–98
differentiation induction by 116

inhibition of ODC 94, 108, 113, 115, 125, 443
on colonic tumors 96
on mammary tumors 99
radiolabelled binding studies 115
resistance 118, 126
with MGBG 130, 135
α-Difluoromethylputrescine inhibition of ODC 115
Dihydrofolate reductase (DHFR; EC 1.5.1.3)
activation 15–20
by DTNB 14, 16–18, 22
by salts and chaotropes 22
mechanism 21–23
altered forms 14
MTX resistance and 6–8
conformational states 22
electrophoretic forms 15, 21
gene amplification 5, 6, 8, 14
pH on 19
inhibition by antifolates 360, 361, 369
isoelectric focussing 15, 23
MTX
inhibition plots 16–20
resistance and 358, 438, 439
target 3, 13
polymorphism 15
properties 7, 15
protein levels and BW301U treatment 370
synthesis increase 369
Dihydro-orotase (EC 3.5.2.3) acivicin and 196
2,6-Dihydroxypyridine 397
7,12-Dimethylbenz(a)anthracene (DMBA) induction of mouse mammary tumors 99
1,2-Dimethylhydrazine induction of mouse colorectal cancers 96
Dipyridamole
acivicin and 181, 219
on salvage nucleosides 199, 219
5,5′-Dithiobis(2-nitrobenzoic acid) (DTNB) activation of DHFR 14, 16–18, 22
DNA
alkylation by addressed agents 286, 287
5-aza-2′-deoxycytidine incorporation 341
double-strand breaks, adriamycin and 263
intercalated, 2 quantum splitting 288
interstrand crosslinks
cell proliferation and 250, 258
chlorambucil 251
N-mustard 250
oligonucleotide derivatives on 312–314
splitting, free radicle mechanism 289
synthesis
antifolate inhibition 362–367, 372
5-azacytidine on 337, 338
growth factor induced 255
rate limitation 398
ribonucleotide reductase activity and 388–391, 441
thiosemicarbazones on 392
cDNA encoding ODC 110
DNA-methyltransferase (EC 2.1.1.37)
5-azacytidine on 340
DNA polymerase (EC 2.7.7.7)
ara-C on 198
assay 387
CMV 377, 378
EBV 377, 378
HSV-1 377, 378, 380, 382
HSV-2 377, 378
human α and β 378
inhibitors 291, 292, 398, 441
K_m values of dNTP for 378
dNTP concentrations and 388, 389
nucleotide analogs and 291, 292, 377–383
ribonucleotide reductase and 386, 397, 398
Dog acivicin toxicity 185
DON
on L-asparagine synthetase 182
on XMP aminase 182
structure 180
Doxorubicin *see* Adriamycin

E. coli, polyamine requiring 103
Echinocyte
adriamycin on 266
morphology 264, 266
Echinocytosis
adriamycin on 266–268
NAG on blockade 268
phorbol esters on 272
polyphosphoinositides and 269
prevention by amphipaths 266
EDTA ribonucleotide reductase inhibition potentiation 393
Ehrlich ascites tumor cells
BW301U on 362
chlorambucil on 251
chlorpromazine on 257
flunarizine on 257
furosemide on growth 253
IMP dehydrogenase from 29
mepacrine on 257
N-mustard on 257
N-mustard resistant 247
ribonucleotide reductase 386
TMB-8 on 257

Enzyme
inhibitors
irreversible, affinity labelling of 277
NTP derivatives 289–292
targets for antimetabolites 162–164
Epstein-Barr virus (EBV) DNA polymerase 377
dNTP analogs and 379
Erythrocytes
adriamycin on 263–273
desialation of 264
discocyte–echinocyte transition 264, 266–268
ghosts 265
inside-out vesicles (IOVs) 264, 268
phosphoinositides in 265
Erythro-9-(2-hydroxy-3-nonyl)-adenine (EHNA)
on adenosine deaminase 326, 327
deoxyadenosine and, on ribonucleotide reductase 394
synergistic growth inhibition 395, 396
Erythroid cells of bone marrow BW301U on 369
Ethylglyoxal bis(guanylhydrazone) (EGBG) 127
cellular accumulation 131
inhibition of S-adenosylmethionine decarboxylase 129
on ODC 132
3′-Exonuclease activity of HSV DNA polymerase 377

Familial polyposis 95
α-Fetoprotein in hepatocellular carcinoma 431
FGAM synthetase (phosphoribosylformyl-glycinamidine synthetase; FGAR amidotransferase; EC 6.3.5.3)
acivicin on 179, 215, 217
in neoplasms 207
L-glutamine antagonists on 182
Flunarizine
N mustard and 258
on Ehrlich ascites 257
F1ACTP (1-(2′-deoxy-2′-fluoro-β-D-arabinofuranosyl)-5-iodocytosine triphosphate) 377, 378
2-Fluoro-araATP
on ribonucleotide reductase 394, 395
synergistic growth inhibition 395, 396
2-Fluoro-2′-dATP
on ribonucleotide reductase 394
2-Fluorodeoxyadenosine synergistic growth inhibition 395, 396
5-Fluorouracil (5-FU) chemotherapy 143–151
combination 96, 97
acivicin and 196, 198
FAM 146, 147
multidrug regimens 150
nitrosources and 145
PALA and 198
in breast cancer 150, 151
in colorectal cancer 148, 149
in gastric cancer 144–147
in pancreatic cancer 145–147
metabolism 197
5-Fluorouridine
6-azauridine and D-galactosamine on human hepatoma 429–433
on tumor cells sugar analogs and 421, 423
FMAUTP (1-(2′-deoxy-2′-fluoro-β-D-arabinofuranosyl)-5-methyluracil triphosphate 377, 378
competition with dTTP 379
Folate antagonists *see also* Antifolate
cytotoxicity of MTX and BW301U 367–369
ideal requirements for 359
phenotypic resistance to 369–372
Formycin ATP on ribonucleotide reductase 394
1-Formyl-galactal on sialic acid 409
1-Formyl isoquinoline thiosemicarbazone on ribonucleotide reductase 392, 393
2-Formyl quinoline thiosemicarbazone on ribonucleotide reductase 392, 393
Fowl plague virus (FPV) *see* Influenza virus
Fucokinase (EC 2.7.1.52)
assay 408
1-methyl fucoside on 410
Fucoproteins biosynthesis Clobenoside on 412
L-Fucose
biosynthetic pathway and inhibitors 409
Clobenoside on 412
on cell growth 413
Fucose-1-phosphate pyrophosphorylase
assay 408
1-methyl fucoside on 410
FUDP-sugar analogs 422
Furanydil-fluorouracil (Ftorafur)
chemotherapy in gastric cancer 147
Furosemide
inhibition of cell multiplication 253
on K transport 252, 253, 256

Galactokinase (EC 2.7.1.6.)
assay 407
in Leloir pathway 414

D-Galactosamine
acivicin and 199, 240
in experimental chemotherapy 423–425
on human hepatocellular carcinoma 429–433
on nucleotide contents 421
pyrimidine synthesis inhibitors and 239–241, 420, 421
uridylate trapping and 419
Galactose
biosynthesis inhibitors 409
metabolites, separation 408
Galactose-1-P-uridyltransferase (EC 2.7.7.10) in Leloir pathway 414
D-Galactosone, uridylate trapping and 419
N-Galacturonyl-L-phenylalanine
on fucose 409
on galactose 409
Gastric secretion block by 5-azacytidines 346
GDP
DBD and VF-122 on 171
biosynthesis
Clobenoside on 411, 412
1-methyl-fucoside on 410
pools in TR sensitive and resistant cells 74
Gene
amplification, DHFR overproduction and 358, 370
expression, alteration by tiazofurin 79, 81
D-Glucosamine
in experimental chemotherapy 423–425
on UTP content 419
Glutamine
acivicin resistance and 182, 225
antagonists and structures 180
CNS amino acids and 193
content of liver and hepatoma 213–215
protection from antiglutamines 208, 213
tissue content 225
Glutamine-utilizing enzymes
see also individual enzymes
acivicin and azaserine on 209
γ-Glutamyltransferase (γ-glutamyltranspeptidase; EC 2.3.2.2)
acivicin on 182
marker in hepatocellular carcinoma patients 431, 432
Glycoprotein biosynthesis
inhibitors 405–415
sites of modification 405, 406
Glyoxal bis(guanylhydrazone) (GBG) 127
cellular accumulation 131
on putrescine and spermidine 130
GMP pools in TR resistant and sensitive cells 74
GMP synthetase (EC 6.3.4.1)
acivicin on 169, 180, 212, 214, 218, 220, 227–229
assay of brain 226
in hepatomas 164
in neoplasms 207
Growth factor binding and subsequent events 256
GTP
acivicin on 216–218, 227, 229
biological functions 48
biopterins and 230
DBD and antimetabolites on 168
D-galactosamine on 421
in hepatoma 216–218
lapachol on 421
paranoid schizophrenia and 229–231
pools in TR resistant and sensitive cells 70, 74
tiazofurin and 50
araGTP on ribonucleotide reductase 394
dGTP
DBD and antimetabolites on 169
in hepatoma, acivicin on 217
-nucleotide analog competition for DNA polymerase 379, 380
pools in TR resistant and sensitive cells 70, 74
tiazofurin and 50, 58, 59
GTP cyclohydrolase (EC 3.5.4.16) biopterins and 225
Guanazole on ribonucleotide reductase 385
Guanine
alkylation by addressed oligonucleotide derivatives 311
reversal of cytotoxicity by ribavirin and selenazofurin 39
tiazofurin on 54
TR on incorporation 78
Guanine phosphoribosyltransferase (GPRT; EC 2.4.2.8) inhibition by IMP 52, 53, 56, 440
Guanosine
metabolism with ribonucleotide reductase inhibitor 390
reversal of antiviral action 32–35
Guanosine kinase of *T. vaginalis* 329
Guanylate
biosynthesis
chemotherapy and 46, 63
tiazofurin on 70, 75, 78
pools
antivirals on 31, 39
TR on 76, 80, 84, 86
Guanylate kinase (EC 2.7.4.6)
acyclovir and 330

bis (Guanylhydrazones)
cellular accumulation 130, 131
chemotherapy choice 134
inhibition
of diamine oxidase 129, 130
of 5-adenosylmethionine decarboxylase 127, 130, 135
interactions with ODC inhibitors 132
on ODC 132, 133
structure–activity relationships 127, 129

Hamster
HT_2b cell transformation 98
WDPDPaCa cell inhibition 98
Hemagglutinin mRNA 316
HeLa S3 DNA polymerase 377
Hemophilus parainfluenzae polyamine requiring 103
Hepatocytes
fucose metabolism, Clobenoside and 412
pyrimidine production by 422
Hepatoma *see also* Human neoplasia
3924A 46, 155
acivicin on 158, 159, 208, 209, 213, 214, 218, 220, 442
actinomycin on 220
antimetabolites and DBD on 165–172
azaserine on 208, 209, 213, 214
combination chemotherapy 442
culture, cells 68
culture, *in vivo* 226
DBD on 157, 158, 165–172
NTPs in 168, 216
dNTPs in 169, 217
PRPP in 216
purine metabolism imbalance 56
pyrazofurin on 159, 160
salvage enzymes 218
stationery phase, properties 161, 162
synergistic growth inhibition 165–167
TAD and 60
tiazofurin on 49–54, 61, 159, 160, 440
TR resistance 79
VF-122 on 160, 161
xanthine oxidase in 55
AS-30D 417
6-azauridine and D-galactosamine on 423
5-fluorouridine and D-galactosamine on 422
lapachol on 420
Morris 3683F ribonucleotide reductase in 385
Morris 7777 5-fluorouridine and D-galactosamine on 422
Morris 9121 2-deoxy-D-galactose on 413
Novikoff 5-azacytidine on 337, 339, 340
Herpes simplex viruses (HSV1, HSV2)
DNA polymerase 377
dNTP analogs and 379–381
thymidine kinases 330
Hexokinase (EC 2.7.1.1) inhibition by NTP derivatives 291
Human neoplasia
adenocarcinoma cell Colo-205 DFMO and 5-FU on 96,97
AML BW301U on 362
bladder cancer acivicin on 189
bone marrow BW301U and MTX on 365–370
breast cancer
acivicin on 183, 184, 186, 188, 189
5-FU on 150, 151
polyamine levels, grades and prognosis 98, 99
polychemotherapy 150
Burkitt lymphoma cells acivicin on 183
cancers MTX treatment regimens 358
cell line K562/MTX 6
colorectal cancer
acivicin on 186, 188, 189, 199
5-FU on 148, 149
DNA polymerases α and β 378
epidermoid lung cancer acivicin on 186
gastric cancer
adriamycin on 146
FAM on 146
Ftorafur and adriamycin on 147
5-FU on 144
5-FU and nitrosoureas on 145
mitomycin C on 146
single and multiple drug therapy 145
germ cell cancer acivicin on 189
glioma acivicin on 189
hepatocellular carcinoma selective antipyrimidine therapy 429–433
dosage schedule 430
patient selection 430
side effects 430
survival times 432, 433
treatment duration 431
tumor marker 431, 433
tumor progression 431
HL60 cells BW301U and MTX on 368, 370, 371
KB cells acivicin on 182
leukemia 5-azacytidine on 341
lung cancer
cell lines TR sensitivity and guanylate pools 85
cells LX-1 acivicin on 184
non-small cell acivicin on 188
small cell acivicin on 186

lymphoma
acivicin on 189
cell lines TR sensitivity and TAD content 85
melanoma acivicin on 186, 189
mesothelioma acivicin on 189
ovarian cancer acivicin on 186, 189
PANC1 cell inhibition 98
pancreatic cancer
acivicin on 186
FAM on 147
single and multiple drug therapy 145
pancreatic MiaPaCa-2 cells acivicin on 183
prostate cancer acivicin on 189
pulmonary adenocarcinoma acivicin on 186
red cells *see* Erythrocytes
renal cancer acivicin on 189
solid tumors 5-azacytidine on 341
WIL-2 cells BW301U on 362
α-Hydrazino-δ-aminovaleric acid (α-hydrazinoornithine, HAVA)
reversible inhibition of ODC 113, 114
stabilization of ODC 108
N-Hydroxy-N′-aminoguanidine derivatives on ribonucleotide reductase 385
N-Hydroxyglycine amide ribonucleotide reductase specificity and 391
Hydroxyurea
on ribonucleotide reductase 385, 391
synergistic growth inhibition 395–397
Hyperaminoaciduria after azaribine 336
Hypoxanthine incorporation, tiazofurin on 54, 78
Hypoxanthine-guanine phosphoribosyltransferase (HPRT; EC 2.4.2.8)
feedback inhibition 79
in *Leishmania donovani* 329
induction by 5-aza-2′-deoxycytidine 343
tiazofurin on 52, 53, 56, 60, 62, 84

Ibotenic acid structure and acivicin 192
Immunodeficiency, adenine deaminase and 326
Immunoglobulin synthesis arrest by mRNA modification 304, 314, 315
IMP
de novo and salvage synthesis 77, 80
:GTP ratio and tiazofurin 61
:dGTP ratio and tiazofurin 61
metabolism in hepatomas 47
pools in resistant and sensitive L1210 cells 73
sources of 52
tiazofurin and 50, 54, 63

IMP dehydrogenase (EC 1.1.1.205)
in tiazofurin resistant and sensitive cells 70, 79, 80
inhibition 29–40
antiviral activity and 31
by TAD 439, 440
guanine nucleotide levels and 31
inhibitors biochemical differences of 39
NADH receptor on 49
neoplasia and 47, 61
tiazofurin on 46, 49, 51, 60, 157, 163, 164
IMPY *see* Pyrazolimidazole
Influenza virus
genome 315
inhibition by oligonucleotide derivatives 304, 315–317
Inosinate, *see also* IMP
pools tiazofurin on 76, 84
synthesis tiazofurin on 75
Inositol
phosphates from erythrocyte ghosts 265
phospholipids
Ca-induced breakdown 270
growth control and 272
on erythrocyte morphology 269
Inox, IMPY and, on ribonucleotide reductase 394
Iodoacetamide (IAM) on DHFR 18–20
5-Iodotubercidin on adenosine kinase 326

Krebs II ascites cells, nucleic acid modification 302, 305–312
viability and 312

Lapachol
on nucleotide contents 421
on pyrimidine synthesis 420
Lectins, echinocytosis and 267
Leishmania donovani enzymes of 328, 329
Leloir pathway, inhibitors of 414
Leucyl-tRNA-synthetases (EC 6.1.1.4)
γ-substituted NTP as substrate 291
Leukemia, mouse
L1210
acivicin on 182–184
adriamycin on 263
5-azacytidine and analogs on 341–345
bredinin on 30
BW301U on 30
culture 68, 386, 387
guanylate in 74–78
bis(guanylhydrazones) on 132–134
hypoxanthine and guanine incorporation 78

IMP sythesis in 77
inosinate in 75, 76
MTX resistant 6, 14, 438
nucleotide concentrations in 69
purine nucleotide synthesis in 69
selenazofurin on 30
synergistic inhibition by ribonucleotide reductase inhibitors 393–398
TAD formation in 72
tiazofurin on 30, 81–84
tiazofurin resistant 72–79, 439
L5178Y
5-azacytidine on 337, 338
MTX resistance 5, 6
selenazofurin on 30
tiazofurin on 30
P388
acivicin on 182, 184, 197
acivicin resistant 181
5-azacytidine on 337
BW301U on 362
5-FU on 197
selenazofurin on 30
tiazofurin on 30, 81–84
tiazofurin resistant, characteristics 70
Lewis lung carcinoma, tiazofurin on 30, 81–84
Liver
glycoprotein synthesis and its inhibition 405–415
regeneration, 5-azacytidine on 338
Lymphocyte-mediated toxicity 326
Lymphoma, mouse, S49, ODC from 110

Mammary tumor *see also* Human breast cancer
TA3 (mouse) 417
6-azauridine on 419, 423, 424
5-fluorouridine on 423, 424
D-glucosamine on 419, 423, 424
D-glucose analogs on 418
Mannosidases inhibition of 406
Melanoma, mouse B16
BW301U on 362
tiazofurin on 81–84
Membranes, effects of alkylating agents 247–259
MepUCHRC1 alkylation of DNA 284
Mepacrine
N-mustard and 258
on Ehrlich ascites 257
Methionine synthetase in MTX-resistant cells 8
Methotrexate (MTX)
chemotherapy 143
effect of enzyme activators 15–20, 23
inhibition of DHFR 13, 16, 438
on DNA synthesis 362–364
on 3T6 cells 363, 364, 369
polyglutamylation 4, 13
resistance 3–9, 13, 358, 438, 439
acquired 5–7
after BW301U treatment 365–368
clinical studies 6
factors affecting 4
lipophilic antifolates and 359
natural 3–5
3T6R400 cells 364, 369
uptake and 4, 8
structure 361
transport DHFR activity and 363, 364, 369
Methoxyurea, ribonucleotide reductase specificity and 391
δ-Methyl-α-acetylenic putrescine (6-heptyne-2,5-diamine)
antitumor action 117
inhibition of ODC 115, 116
1-Methyl fucoside inhibition of fucose synthesis 409, 410, 414
α-Methyl-α-hydrazinoornithine (5-amino-2-hydrazinomethylpentanoic acid)
inhibition of ODC 114
1-Methyl-1-nitrosourea (MNU) induction of rat mammary tumors 99
1-Methylene-D-galactose on galactose 409, 414
1-Methylene-isoquinoline-N-hydroxy-N'-aminoguanidine on ribonucleotide reductase 393
2-Methylene-quinoline-N-hydroxy-N'-aminoguanidine on ribonucleotide reductase 393
Methylglyoxal-bis(guanylhydrazone) (MGBG)
cellular accumulation 131
inhibition of 5-adenosylmethionine decarboxylase 105, 127–129
interaction with carnitine 134, 136
on mitochondrial function 133
on ODC 132
structure comparison 127, 128
with DFMO 100, 130
with α-difluoromethylornithine 117
N-Methylhydroxyurea on ribonucleotide reductase 391
N-Methylimidazole (MeIm) in oligonucleotide synthesis 279, 280
α-Methylornithine
drug resistance 118
inhibition of ODC 108, 114
5'-Methylthioadenosine from spermidine and spermine syntheses 106, 107

5'-Methylthioadenosine phosphorylase (5'-methyladenosine:orthophosphate methylthioribosyltransferase; EC 2.4.2.28) in methionine salvage 106, 107
Metoprine (DDMP)
chemotherapy 360, 361
on DHFR levels 370
on DNA synthesis 362, 364
on mouse tumors 371
on MTX-treated cells 359
structure 361
toxicity 361
Mitomycin C in FAM therapy 146
Monkey acivicin toxicity 185
Monoamine oxidase (EC 1.4.3.4) oxidation of 5-hexyne-1,4-diamine 116
α-Monofluoromethylornithine inhibition of ODC 115
α-Monofluoromethylputrescine inhibition of ODC 115
Mouse
acivicin toxicity 184
3T6R400 cell line antifolates on 6, 363, 364, 369
tumors *see also* individual names
colonic 96
renal 100
tiazofurin sensitivity 82, 83
Muscimol structure and acivicin 192
Mutagenesis, site directed 314
Myeloid cells of bone marrow BW301U on 369
Myeloma mouse MOPC21 mRNA modification 304, 314, 315

NAD
analog of selenazofurin 30
analog of triazofurin 30
in tiazofurin-resistant cells 70, 71
synthesis inhibition 39
tiazofurin and 48–52, 57, 59, 60, 63
NADP tiazofurin on 59
NADPH
on MTX binding 4
tiazofurin on 59
NAD pyrophosphorylase (NADPPase; EC 2.7.7.1) 48, 69
in sensitive and resistant mouse tumors 80–82
in tiazofurin resistant cells 70, 71, 73
tiazofurin and 49, 59, 60, 63
Neisseria perflava polyamine requiring 103
Neomycin inositol lipid binding 270
Neoplasia *see also* Human neoplasia *and* specific neoplasias
gene expression, reprogramming 56
GMP and 47
GMP synthetase and 47
dGTP 47
IMP dehydrogenase 47
Neuraminidase (EC 3.2.1.18) desialation of erythrocytes 264, 268
Neuroblastomas induction of differentiation in 116
Neurospora crassa polyamine requiring 103
Neurotoxicity of acivicin 186, 188–194, 225–231
glutamine and 193
possible cause 191, 192
Nicotinamide phosphoribosyltransferase (EC 2.4.2.12) inhibition by antivirals 39
p-Nitrobenzylthioinosine on nucleotide transport 326
Nitrogen mustard (N-mustard) 248
chlorpromazine and 258
flunarizine and 258
inhibition of Walker cell growth 249
mepacrine and 258
on cell multiplication 252
on intracellular pH 255
on K transport 252, 253
on Na influx 254
TMB-8 and 258
N-Nitrosobis(hydroxypropyl)amine transformation of hamster cells 98
Nitrosoureas potentiation of 5-FU 144–145
Nojirimycin (N) inhibition of glycoprotein synthesis 406
L-Norvaline on pyrimidine synthesis 236
NSC-163501 *see* Acivicin
dNTPs
concentration, DNA synthesis and 388–390
K_m values for different DNA polymerases 378
on ribonucleotide reductase 386
Nucleic acids, complementary addressed alkylation of 282, 302, 305–312
alkylated bases after oligonucleotide derivatives 1, 11, 111 311
modification by 1, 11 and 111 309
non-addressed alkylation 310
Nucleoside analogs
biologically active 324
competition 325
inhibition by 326
loci of action 325
selective chemotherapy 328
Nucleoside 5'-diphosphate reductions, dNTPs on 386
Nucleoside 5'-diphosphate kinase (NDPK) 386

Nucleoside phosphotransferase (EC 2.7.1.77)
in *Leishmania donovani* 328, 329
Nucleoside salvage
acivicin and 217, 218
dipyridamole on 219
inhibitors 199
Nucleoside-5′-trimetaphosphates (NTMP)
from NTP 289
Nucleoside-5′-triphosphate (NTP)
γ-derivatives for affinity labelling 289–292
Nucleosides in chemotherapy 323–331
structural modifications 323–325
transport inhibition 326, 330
Nucleotides
acivicin on 225–231
analog triphosphates, DNA polymerase and 377–383
analogs, preferential phosphorylation in infected cells 378
derivatives as enzyme inhibitors 277–296
inhibition of synthesis 406, 407
rat brain, acivicin on 226, 227, 229
rat hepatoma acivicin on 229
rat liver acivicin on 229

Oligonucleotide derivatives as targeted inhibitors *see also* Oligothymidilyl
as antiviral agents 315
biochemical aspects 301–318
chemical aspects 277–296
of platinum complexes 288
on chromatin 303, 312–314
on enzymes 277–296
on hemagglutinin mRNA 316
on influenza virus 315–317
on MOPC 21 cells 314, 315
on nucleic acids 302, 303, 305–312
site directed mutagenesis 295
Oligonucleotides
alkylating derivatives of 281, 282
synthesis with 5′-phosphate 278–281
homogeneous procedure 279–281
solid phase scheme 279, 280, 292
Oligothymidylate derivative, DNA splitting and 289
Oligothymidilyl uridine derivatives (I-IV) 305
alkylation
by I, II and III 309, 311
by II and III 308
by II on cell viability 312
as complementary addressed nucleic acid modifiers 305–312
on Krebs II cells 306, 307

OMP decarboxylase (EC 4.1.1.23) 156
in 3924A cells 162, 163
inhibition 233, 444
Ornithine
biosynthesis 106, 107
on CP 237
on pyrimidine synthesis 239
Ornithine aminotransferase (L-ornithine:2-oxoacid aminotransferase; EC 2.6.1.13)
ornithine synthesis and 106, 107
Ornithine carbamoyltransferase (carbamoyl-phosphate:L-ornithine carbamoyltransferase; EC 2.1.3.3) 106, 107
inhibition 237
Ornithine decarboxylase (L-ornithine carboxy-lyase; ODC; EC 4.1.1.17)
activity in colonic mucosal cells 95
antibodies 109
antizyme inhibitor 112
antizymes 111
carcinogenesis and 95, 96
cloning of cDNA 110
control and chemotherapy 93–100, 103–119
gene amplification 118, 126
gene expression 111
bis(guanylhydrazones) on 132, 133
induction 105
inhibition, consequences of 125–127
inhibitors 108, 113–116
intracellular localization 109
polyamine biosynthesis and 93, 94, 104, 106, 107
post-translational modification 112
properties 108, 109
regulation 110–112, 443
synthesis 111
turnover rate 111
Orotate
hepatic content 235, 236, 238
measurement 235
4-pentenoate on 240
synthesis stimulation 234, 237
Orotate phosphoribosyltransferase (EC 2.4.2.10), 5-azacytidine on 338
Orotidine-5′-phosphate decarboxylase (EC 4.1.1.23), 5-azacytidine on 338
Ouabain-sensitive K transport system 252
furosemide on 253

Pancreatic cancer, DFMO on 97, 98
Parainfluenza virus type 3 strain C243, ribavirin and selenazofurin on 32
Paranoid schizophrenia
acivicin and 230, 231
D-galactosamine on 421

GTP and 229–231
tiazofurin and 229, 231
4-Pentenoate
CP synthesis and 237, 238
on pyrimidine synthesis 239, 240
Phenylalanyl-tRNA-synthetase (EC 6.1.1.20)
NTP derivatives on 291, 292
Phorbol esters on echinocytosis 272
Phosphodiesterase, snake venom (EC 3.1.15.1) in UMP analysis 234
Phosphoglycerate kinase (EC 2.7.2.3)
acyclovir and 330
Phospholipase C (EC 3.1.3.36) activation, growth factor and 256
N-(Phosphonacetyl)-L-aspartate and pyrimidines, D-galactosamine and 420, 421, 423
N-(Phosphonoacetyl)-L-aspartic acid (PALA)
acivicin resistance and 181
5-FU and 198
inhibition of ATCase 196
Phosphonoformic acid (PFA)
binding to HSV DNA polymerase 380, 381
resistant DNA polymerases 382
Phosphoribosylpyrophosphate (PRPP), acivicin on 215, 216
Plasma membrane, alkylation of 250, 251
Platinum complexes oligonucleotide derivatives on DNA 288, 289
cis-Platinum inhibition with DFMO 98
Physarum polycephalum ODC
phosphorylation in 112
Poly(A) sequences as modification targets 301
Poly(ADP ribose) polymerase inhibitors 39
Polyamines
biosynthesis 93
enzymes of 104, 106, 107
inhibition 125, 443
cellular accumulation, bis(guanylhydrazones) on 130, 132, 133
dependent cells 103
levels
in colonic cancer 96
in mammary cancer 98
pancreatic growth and 97
Polyethyleneimine-bound chlorambucil on Ehrlich ascites cells 250, 251
Polyglutamate synthetase MTX resistance and 5, 8
Polyhydroxysubstituted benzene on ribonucleotide reductase 385
Polymer-bound alkylating agents 250
Polynucleotide kinase (EC 2.7.7.78) 302
Polyposis genotype, ODC activity and 95
Potassium transport systems
cell proliferation and 251
in Ehrlich ascites cells 252
N-Propionyl-D-glucosamine on sialic acid 409
5-Propyl-2′-deoxyuridine triphosphate (PdUTP) 377
dTTP and 379
Propylglyoxal bis(guanylhydrazone) (PGBG) 127
cellular accumulation 131
Protein synthesis, mRNA alkylation on 286
Protein kinase C (EC 2.7.1.37) activation, growth factor and 256
Proteinase K (EC 3.4.21.14) 302
PRPP, tiazofurin and 50, 57, 60, 62
Psoriasis, azaribine on 336
Purine
biosynthesis
de novo flux 69, 78
in L1210 cells 69
salvage flux 69, 78, 80, 84
in protozoa 328, 329
MTX sensitivity and 4
nucleotides in hepatomas 47, 56
substituents
herpes virus and 330
on substrate activities 326
Purine nucleoside phosphorylase (EC 2.4.2.1)
8-aminoguanine on 326–331, 395
in *Leishmania donovani* 329
specificity 323
Purineless death, MTX produced 4
Putrescine
biosynthesis 93, 94, 106, 107
deprivation, cellular compensation 126
in spermidine synthesis 104
levels in mammary cancer 98, 99
Putrescine aminopropyl transferase (EC 2.5.1.16) *see* Spermidine synthase
Pyrazofurin
5-azacytidine and 337
D-galactosamine and 420, 421
-DBD
on 3924A cells 165, 166
on deoxyribonucleotides 169
on ribonucleotides 168
on 3924A cell survival 159, 160
on OMP decarboxylase 157, 163
Pyrazoloimidazole (IMPY) on ribonucleotide reductase 385, 393
synergistic action 394–397
Pyrimidine
analogs, herpes virus and 330
catabolism 420

synthesis
by hepatocytes 422
inhibition by acivicin 233–242
inhibition by lapachol 420
inhibition, UTP deficiency and 419
ornithine on 239
pentanoate on 239, 241
regulation 240
stimulation 236–241
Pyrimidine ribonucleosidase (EC 3.2.2.8) in *Leishmania donovani* 329
Pyruvate kinase (EC 2.7.1.40) 408

Rat
brain enzymes, acivicin on 225–231
gastric ulcers, 5-azacytidine on 346
kidney tumor
acivicin on 212
azaserine on 211
liver
acivicin on 209, 210, 213–216
azaserine on 209, 210, 213, 214
CP content 235
nucleotide content, lapachol and D-galactosamine on 421
pyrimidine synthesis in 236, 237, 239
Renal cancer DFMO on 100
Ribavirin antiviral activity 29–40, 439
IMP dehydrogenase inhibition and 31, 40
mechanism of action 36–39
on para-3 34, 35
on vaccinia 34
synergism with selenazofurin 31
Ribonuclease A (EC 3.1.4.22) 302
on chromatin 313
Ribonuclease T1 (EC 3.1.4.8) 302
Ribonucleotide reductase (EC 1.17.4.1)
chemotherapy and 47, 58, 385–398
DNA polymerase and 397, 398
DNA synthesis and 388–391
effector subunit 385, 386
hydroxyurea on 385, 391
inhibitors of 385, 440, 441
inhibitory sites on 391
iron-chelating agents and 392, 393
N-methylhydroxyurea on 391
non-heme iron subunit 385, 386
NTP analogs on 394
synergistic inhibition 394–397, 441
RNA
anti-sense, translation arrest and 315
synthesis, 5-azacytidine on 337
translation, inhibition by alkylation 286
mRNA
hemagglutinin 316
immunoglobulin, modification on IgG synthesis 304, 314, 315
stability, ODC activity and 111
synthesis, ribavirin on 36–38
rRNA
alkylation kinetics 283
maturation, 5-azacytidine on 338, 340
RNA polymerase (EC 2.7.7.6)
5-azacytidine and 337
γ-subsituted NTP as substrate 291
Rubidium 80, K transport study and 251
uptake inhibition by N mustard 252, 253

Sarcoma
180 (rat)
acivicin on 212
azaserine on 211
BW301U on 362
M5076 (mouse)
acivicin on 184
tiazofurin on 81–84
Schizophrenia *see* Paranoid schizophrenia
Selenazofurin
antiviral activity 29–40
IMP dehydrogenase inhibition and 31
on para-3 34, 35
on vaccinia 33
synergism with ribavirin 31
-NAD analog 30
on L5178Y 30
on P388 30
phosphorylation 30
Sialic acid
biosynthesis, inhibitors of 409, 413
Clobenoside on 413
in hepatoma cells 405
Sodium/hydrogen-antiport
growth stimulation and 254
pH and 255
N-mustard on 254, 255
Spermidine
biosynthesis 93, 94, 106, 107
deprivation, cellular compensation 126
in mammary cancer 98, 99
structure comparison 127, 128
uptake competition by bis(guanylhydrazones) 131
Spermidine synthase (5-methyladenosyl-homocysteamine: putrescine aminopropyltransferase; EC 2.5.1.16)
inhibition by DCHA 94, 98
polyamine biosynthesis and 104, 106, 107
Spermine
biosynthesis 93, 94, 106, 107

in mammary cancer 98, 99
Spermine synthase (5-methyladenosylhomocysteamine:spermidine aminopropyltransferase; EC 2.5.1.22) 94
polyamine biosynthesis and 104, 106, 107
Streptomyces sviceus acivicin from 179
Sugar
alterations in nucleoside analogs 324
analogs
FUDP- 422
inhibition of glycoprotein synthesis 406, 414
on pyrimidine synthesis inhibitors 417
uridylate trapping 418, 421
Sulfhydryl-modifying agents
on DHFR electrophoretic mobility 21
on DHFR inhibition 15–20
Swainsonine (SW) inhibition of glycoprotein synthesis 406
Synergism 31, 98, 164–169, 171, 195, 200, 219–221, 258, 259, 342, 343, 393–398, 441

TAD (thiazole-4-carboxamide adenine dinucleotide) 48
formation by L1210 cells 72
in human lymphomas 85
in murine tumors, tiazofurin resistance and 81, 82
in tiazofurin-resistant cells 80
structure 68
tiazofurin and 49, 59, 60, 63
TAD phosphodiesterase (TADase; EC 3.1.4.1) 69
in tiazofurin-resistant and sensitive cells 70, 73, 81, 83, 86
tiazofurin and 49, 59
Teratocarcinomas induction of differentiation in 116
Tetrahydrouridine on deoxycytidine deaminase 326
Tetramethylguanidine (TMG) in oligonucleotide synthesis 279, 280
Tetrathionate on DHFR 17–20
Thioacetamide stimulation of ODC 105, 108
6-Thioguanine (6-TG) acivicin and 195
Thiosemicarbazones on ribonucleotide reductase 385, 392
Thymidine block in L1210 cells 397
Thymidine kinase (EC 2.7.1.21) 378
5-azacytidine on 338
in herpes virus 330
in rat hepatomas 328
specificity 323, 330
Thymidine phosphorylase (EC 2.4.2.4)
in rat hepatomas 328
inhibition 397
Thymidylate kinase (EC 2.7.4.9), 5-azacytidine on 338
Thymidylate synthetase (EC 2.1.1.45)
antifolates on 368, 370
5-FU on 196, 197
in MTX-resistant cells 8
Thymineless death, MTX produced 4
Tiazofurin (TR; 2-β-D-ribofuranosylthiazole-4-carboxamide)
acivicin and dipyridamole interaction 199
action, primary, secondary and tertiary markers 45–64
dATP and 58, 59, 62
biochemistry of resistance 67–87
chemotherapy, background to 48, 440
dCTP and 58, 59
-DBD
on 3924A cells 165, 167
on nucleotides 168–170
GDP and 51, 62
GTP and 50, 62
dGTP and 50, 58, 59, 62
HPRT and 56, 62
IMP and 50, 59, 62
IMP:GTP ratio and 61
IMP:dGTP ratio and 61
mechanism of action 67
metabolism 49, 68
-5′-monophosphate (TRMP) 48, 70
NAD and 49–52, 59, 62
-NAD analog 30
on 3924A cell survival 79–81, 159, 160
on AMP deaminase 54, 55
on CHO cells 81
on guanine 54, 78
on guanylate 70, 74–76, 84
on hepatoma 3924A 49–51, 61
on hypoxanthine 54, 78
on IMP dehydrogenase 46, 50, 51, 59, 62, 157, 163
on IMP synthesis 75–77, 84
on L1210 cells 72–79
on Lewis lung carcinoma 439
on liver and hepatoma 51, 52, 57, 58
on NADP 59
on NADPH 59
on P388 cells 30, 70–72
paranoid schizophrenia and 229–231
phosphorylation 30
PRPP and 50, 57, 60
relation to ribavirin and selenazofurin 29, 30

resistance 61
guanylate pools and 85, 86
HGPRTase and 84
inosinate-guanylate ratio and 84, 86
markers of 86
NAD pyrophosphorylase–TADase ratio and 83, 86
TAD content and 82, 85, 86
resistant 3924A cells 79–81
NAD pyrophosphorylase in 80
stability 79, 80
resistant human tumors 84, 85
resistant L1210 cells 72–79
guanylate pools in 74
IMP synthesis in 77
inosinate and guanylate in 75, 76
NAD pyrophosphorylase in 73, 80
stability 72, 80
TAD formation by 72
resistant murine tumors 81
resistant P388 cells 70, 81–84
DNA repair in 71
5-FU on 72
NAD phosphorylation in 70, 80
stability 70, 80
selective action 59, 60
structure 68
TAD and 49, 59
targets and markers 49, 51, 57, 59, 61, 63, 64
secondary 51
tertiary 58
dTTP and 58, 59, 62
uptake in resistant cells 80
TMB-8 on Ehrlich ascites cells 257
N-mustard and 258
Topoisomerase II, adriamycin and 263
TPA comparison with adriamycin action 271, 272
Transamidinase (L-arginine-glycine amidotransferase; EC 2.1.4.1) ornithine synthesis and 106, 107
Transglutaminase (EC 2.3.2.13) ODC inactivation and 113
Tricarboxylic acid cycle, relationship to polyamine biosynthesis 106, 107
Trichomonas vaginalis, enzymes of 329
Triisopropylbenzenesulfonyl chloride (TPS) in oligonucleotide synthesis 279, 280
Trimetrexate (2, 4-diamino-quinazoline, JB-11) in MTX-resistant cells 8, 9, 438
Tryptophanyl-tRNA-synthetase (tryptophan-tRNA ligase, EC 6.1.1.2) inhibition by photoaffinity labelling 291
dTTP
DBD and antimetabolites on 169
in hepatoma, acivicin on 217
-nucleotide analog, competition 379, 380
tiazofurin and 58, 59
Tubericidin on schistosomes 330
Tunicamycin (TM) inhibition of glycoprotein synthesis 405, 406
Tyrosine aminotransferase (EC 2.6.1.5), 5-azacytidine on 347

U-42, 126 *see* Acivicin
UCHRC1 alkylation of nucleic acids 284
UDP, DBD and VF-122 on 171
UDP-galactose-4'-epimerase (EC 5.1.3.2) in Leloir pathway 414
UDP-galactose: glycoprotein galactosyl-transferase (EC 2.4.1.22) inhibition 413
UDP-glucose dehydrogenase (EC 1.1.1.22) 407
UMP analyses 234
Uracil nucleotides, D-galactosamine and 238
Urea
cycle, relationship to polyamine biosynthesis 106, 107
on DHFR 20, 23
Uridine kinase (EC 2.7.1.48) 5-azacytidine and 337, 340
Uridine phosphorylase (EC 2.4.2.9) inhibition 397
Uridylate trapping
sugar analogs 418
UTP deficiency and 419
UTP content
acivicin on 216
6-azauridine on 419
DBD+ antimetabolites on 168
D-galactosamine on 421
D-glucosamine on 419
lapachol on 420, 421
uridylate trapping and 419

Vaccinia virus (strain Elstree) ribavirin and selenazofurin on 32
Varicella-Zoster virus (VZV)
nucleotide analogs and 378
thymidine kinases 330
Vero cells, virus infection of 32
VF-122 (poly(hydroxy)benzohydroxamic acid)
on 3924A cell survival 160, 161
on ribonucleotide reductase 157, 164, 170

with DBD
on 3924A cells 165, 167
on nucleotides 170, 171
α-Vinylornithine inhibition of ODC 115
—Vinylputrescine inhibition of ODC 115

Wilm's tumor resistance to DFMO 100
Xanthine oxidase (EC 1.2.3.2) in hepatomas 55, 59, 60
Xanthine phosphoribosyltransferase in *Leishmania donovani* 329
XMP aminase (XMP: L-glutamine amido-ligase; EC 6.3.5.2)
acivicin on 179, 182
DON on 182